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Linda M. Pappas
Editor-in-chief

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DERWOOD WARNER LOCKARD
1906 - 1976

Ted Lockard, who joined ARCE in 1959, became an Officer in 1962 and an Honorary Member in 1973, died on December 21, 1976, in his Cambridge, Massachusetts, home after a long illness. His interests, scholarly career, and government service were all intimately associated with Egypt and the Middle East, where he spent many years. He was at the Harvard University Center for Middle Eastern Studies from 1954 until he retired in 1973.

Ted was known to a long-lived generation of "Middle East hands" in scholarship and government. He was admired for his knowledge of the region and his service to American interests there. He had the gift of common sense and a cheerful disposition combined with an often caustic wit that was moderated by his fundamental gentleness. He was an easy touch for anyone who needed his help. His appearance, attitude, and manner were most readily described by those who knew him well, or even at all, as "courtly." During his many years as a student, teacher, and administrator at Harvard, his home, hard by the campus, was a special place of hospitality presided over by himself and his charming wife Barbara, who predeceased him.

Ted was born in 1906 in Denison, Iowa. He attended the University of Chicago as an undergraduate, earning his degree in English studies. Just after graduation, he joined a Chicago Oriental Institute expedition to Turkey, then an expedition to Iraq and Iran under the auspices of the University of Pennsylvania Museum. In 1935, he went to Harvard for graduate study in anthropology, and held appointments there in that department and the Peabody Museum.

During World War II, he was in the U. S. Naval Intelligence in the Middle East, then in the U. S. government for about a decade to 1954. In that year he returned to Harvard, where he was lecturer in Anthropology and Associate Director of the Center for Middle Eastern Studies. In this capacity Ted played an important role in the expansion of the ARCE in 1962 and in guiding it during the remainder of that decade while the U. S. headquarters were in Cambridge. He was inactive for several years before he died, but his service to ARCE, even after the move from Cambridge, encompassed many aspects of administration, scholarly judgement, and relations in Egypt and Washington.

Morroe Berger
President

ABDEL MONEIM ABU BAKR
1907 - 1976

The death of Professor Abu Bakr in Cairo on July 26, 1976, was a great shock. He was not only our professor but also our father, advisor, and friend. He was born on March 23, 1907, and was educated partly in Cairo, where he received his B. A. in Egyptology from Cairo University in 1930, and partly in Germany where he received his Ph.D. from Berlin University in 1938. He was then appointed Lecturer at Cairo University. In 1944, he became Assistant Professor and, later, Professor of Egyptology at Alexandria University. He continued his career at Cairo University, however, and was to be responsible for the excavations of Alexandria and Cairo Universities in Giza, Hermopolis, and Nubia.

Much of the success of Professor Abu Bakr's excavations was due to his treatment of the workmen, his generosity, great kindness, and sense of humor. These were the salient points of his character. He contributed numerous articles to archeological journals and was a member of many international Egyptological committees and societies, including honorary membership in the ARCE.

Sayed Tawfick
Cairo University

RESEARCH NEWS

New Fellowship Funds

The ARCE is pleased to report that fellowship funds have been increased this year as a result of two new grants from the National Endowment for the Humanities and the Smithsonian Institution. In addition, we continue to receive fellowship funds from the Department of State, Bureau of Educational and Cultural Affairs (CU). It is anticipated that the ARCE will receive a total of approximately $150,000 for the fellowships during 1977-78.

Fellowship Application Deadline

The new application deadline for 1978-79 research fellowships is November 30, 1977. Interested pre-doctoral and senior scholars are invited to contact the Princeton office for the appropriate forms.

ARCE conveys $1 Million to Philae Restoration

The Smithsonian Institution has awarded the ARCE a grant in the amount of $1 million, Egyptian pound equivalency, representing a United States contribution to the Egyptian Antiquities Organization for the salvage of the Temples of Philae. Under the terms of this award, it will be the responsibility of the Cairo Center to administer these funds and to report on their expenditure.

ARCE TO SPONSOR TOUR TO EGYPT

The ARCE is preparing a special tour to Egypt in January, 1978. Our carefully designed eleven-day program will feature the major historical and archeological sites in Egypt, as well as a visit to Petra in the Kingdom of Jordan. One hundred and fifty guests will be housed aboard the private yacht, Argonaut, on the Red Sea. The ARCE, from the Center in Cairo, will offer special seminars and lectures and will arrange visits to Egyptian, early Christian, and Islamic sites not ordinarily accessible to foreign tourists.

The total price of this tour will be less than $2,000 per person, including air fare, accommodations, and a tax deductible contribution.

Anyone desiring further information is urged to contact the Princeton office immediately.

ARCE IN EGYPT

Lectures on Egyptian Art

Bernard V. Bothmer, Curator of Egyptian and Classical Art, the Brooklyn Museum, and Adjunct Professor of Fine Arts, Institute of Fine Arts, New York University, presented four illustrated lectures on Egyptian art at the Italian Cultural Institute in Cairo during the month of January, 1977. This series was sponsored by both the American Research Center in Egypt and the archeological section of the Italian Institute.

Professor Bothmer discussed the following subjects:

New Aspects of Amarna Art	January 13, 1977
Western Asiatic and Hellenistic Influence in the First Millennium B. C.	January 14, 1977
Three Centuries of Ptolemaic Art	January 21, 1977
Beauty and the Face of Man	January 23, 1977

TUTANKHAMEN IN THE U. S.

In February, 1977, the ARCE, in cooperation with the Friends of the Art Museum, Princeton University, sponsored two day trips to Washington, D. C., to visit the "Treasures of Tutankhamen" exhibit at the National Gallery of Art. Approximately one hundred twenty people participated in this event, which was preceded by a slide lecture on February 7th, given by Professor David O'Connor, Associate Curator of the Egyptian Section, University Museum, University of Pennsylvania.

The Tutankhamen exhibit has since moved on to the Field Museum in Chicago where it will remain until September.

DIRECTORY OF THE EGYPTIAN ANTIQUITIES SERVICE
(MARCH, 1977)

Dr. Gamal Mokhtar	Under Secretary of State and President of the Egyptian Organization of Antiquities
Mr. Ahmed Kadry	Under Secretary of State and Director General of the Egyptian Organization of Antiquities
Dr. Heshmat Messiha	Director of the Division of Ancient Egyptian Antiquities
Mr. Fouad Yacoub	Sub-Director of the Inspectorate of Antiquities of Upper Egypt
Mr. Kamal Sidki	Sub-Director of the Inspectorate of Antiquities of Lower Egypt
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Mr. Abdel Hak Ragab	Chief Inspector, Eastern Delta
Mr. Motaweh Fabbouch	Chief Inspector, Fayoum
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Mr. Talaat Sulaiman	Director of Islamic and Coptic Excavations and Inspectorates
Dr. Sulaiman Ahmed Sulaiman	Director, the Islamic Museum
Mr. Shafiq Abd al-Qadir	Director, Documentation Center for Islamic Antiquities
Mr. Ahmed Hegazi	Chief Inspector, North Cairo
Mr. Ahmed Mekawi	Chief Inspector, South Cairo

EGYPTIAN POPULATION INCREASING

The following article appeared in The Egyptian Gazette on April 4, 1977:

EGYPTIANS NOW NUMBER 38,228,180:
Urban Population Still Rising, But Illiteracy Declining

Egypt's population has risen to 38,228,180 according to the census taken in November last year, Mr. Gamal Askar, Chairman of the Central Agency for Mobilization and Statistics, said at a press conference yesterday.

Preliminary results indicate that 36,656,180 people are living in the country. The number of expatriates is estimated at 1,425,000. An estimated 147,000 are living in those parts of Sinai not yet liberated, Mr. Askar said.

In the period 1966-1976, he added, the population rose by 8,152,322 at a rate of 2.31 per cent. The population has thus been growing during this period at a rate of 65,000 per month, 2,131 per day and one per 41 seconds Mr. Askar said.

The first ten governorates in order of population density are: Cairo, Dakahlia, Sharkia, Beheira, Giza, Alexandria, Gharbia, Minia, Suhag and Menufia, the chairman of the Central Agency for Mobilization and Statistics said.

In Cairo alone, the population is 5,084,463 while in Dakahlia it is 2,077,484. Giza Governorate has taken the place of Qena Governorate as one of the first ten with regard to population density.

Mr. Askar said that the results of the census indicate that the population of urban areas has risen to 44 per cent against 37.4 in the 1960 census and 40.5 per cent in the 1966 census.

The number of males is estimated at 18,698,904 while the number of females is 17,957,276. The working population (those over six years of age) stands at about one-third of the entire population.

The number of working women has risen considerably. The November census indicates that they represent 9.2 per cent against 4.8 per cent in the 1960 census.

Among the findings of the census is that illiteracy has fallen to 56.5 per cent against 70.5 in the 1960 census among those over 10 years old. The decline in female illiteracy was even more remarkable, falling to 71 per cent against 84 per cent in the 1960 census.

Of the whole population, 16.2 per cent, against 6.2 per cent in the 1960 census, hold education certificates lower than university level. Holders of university degrees and certificates equal to university degrees were estimated at 2.2 per cent, against 0.8 per cent in the 1960 census.

The number of women holding university degrees has risen six times, from 0.2 per cent in 1960 to 1.2 per cent in 1976.

The results also indicate that the number of married people represent 65.7 per cent of the total population in the marriageable age, against 69.6 per cent in 1960.

مركز البحوث الأمريكي بمصر

1977 ANNUAL MEETING ABSTRACTS

As a result of numerous requests, we are presenting in this NEWSLETTER (Nos. 99/100) the abstracts of those papers delivered at the "ancient Egyptian" section of our Annual Meeting in Detroit. In forthcoming issues, we hope to publish additional abstracts dealing with medieval and modern topics.

Thebes as a Necropolis in the Libyan Period

Cynthia May Sheikholeslami
University of Chicago

When Schiaparelli cleared the tomb of Khaemwaset (no. 44) in the Valley of the Queens in 1903, he discovered a cache of coffins which he dated to Dynasties 23-26. Some were published by him (E. Schiaparelli, Relazioni sui lavori della missione archeologica italiana in Egitto. I. Esplorazione della 'Valle delle Regine',pp. 127-9, 183-206). The remaining fragmentary material was reburied by the excavator (E. Thomas, The Royal Necropoleis of Thebes, p. 227, n. 90). In the course of my study of the administrative system of Egypt in the Libyan period, I relocated and identified these fragments, which had been re-excavated in 1968 and stored in the Valley of the Queens, and was permitted to study and photograph them in the fall of 1976. This presentation will focus on discussing this material (not cited in Porter and Moss, Topographical Bibliography; nor is much necropolis material of this period from Thebes). A preliminary map of areas of the Theban necropolis known to have yielded materials dating from the Libyan period will also be presented.

Indicating the general areas in use on the West Bank at this period and specifying the provenance of material so far discovered permits determination of whether particular families or groups selected certain sites for burial, and the general use pattern of various areas and structures there ca. 945-710 B.C. This may also help give more specific provenance to materials said to come from the Theban necropolis which entered museum collections before the period of modern excavation, especially in the 19th century (when the necropolis was so extensively plundered), and indicate likely areas for future work.

A Rediscovered Monument of the Eighth Century B.C.

Edna R. Russman
Museum of Fine Arts, Boston

Examination of a recent acquisition by the Museum of Fine Arts permits us to revise its earlier published attribution, and sheds interesting light on one aspect of the end of the Third Intermediate Period and the Kushite takeover of Egypt.

The Concept of Kingship in Dynasty XXVI

Anthony Spalinger
Yale University

A two-tiered approach is necessary for a correct understanding of the real (rather than ideal) nature of kingship in the Saite Epoch. Such a program is necessary as a keener awareness of the position of the monarchy in Dynasty XXVI can be found in inscriptions of a non-hieroglyphic nature. Such literature (in Greek and Demotic), often postdating the events themselves, avoids the idealized tableau which the Pharaohs tried much to foster. Hence, although the official texts of the Saite Period will be discussed, the main thrust of analysis must depend upon those of a non-official nature.

Two salient points will be covered. The immediate impression from the historical data is that the kings of this era were trying to shore up their positions, both internally as well as abroad. Secondly, those monarchs did not at all concern themselves with trying to be "good shepherds", nor did they emulate the young generalissimos of the New Kingdom. A few private inscriptions point to motifs borrowed from the First Intermediate Period whereas the secular traditions reflect the image of a mortal. In the Saite Era one deals with human rulers of Egypt, Pharaohs who had lost most, if not all, of the aura of divinity.

Clay Anthropoid Coffins in Egypt

Lisa Kuchman
University of Toronto

In the literature on Egyptian coffins one type is almost never discussed - the clay anthopoid coffin. These coffins seem to have been virtually ignored by many excavators, and the information given concerning the quantities of them and their dates is both scanty and dubious. They occur in cemetaries throughout Egypt, a fact largely overlooked until now, and their use spans a period of almost two thousand years. This paper will present the find-spots of these coffins, the style of the coffins, and an analysis of the associated grave goods. One special point of interest in regard to these coffins will be to compare the information assembled here with the conclusions drawn by some Palestinian archeologists based on similar coffins found in Palestine and Jordan.

Mycenaean Pottery and Amarna

Martha R. Bell and Angela Milward
University Museum, University of Pennsylvania

The transition of the Mycenaean pottery style LH IIIA 2 to LH IIIB has commonly been placed in Dynasty XIX, based, in part, on dated finds from Amarna and Gurob. Amarna, treated as a closed deposit, was thought to contain no Mycenaean pottery later than LH IIIA 2. However, LH IIIB pottery has recently been identified, leading some scholars to place the transition in Dynasty XVIII, by the time Tutankhamen left Amarna. The transition may well have occurred during the occupation of Amarna, but this cannot be certainly said to have ended in the reign of Tutankhamen. If the occupation can be proved to have lasted into Dynasty XIX, the evidence from Amarna will cease to be anomalous and will fit the chronological sequence suggested by Gurob and other sites.

Ahhotep II and Amenhotep I

Ann Macy Roth
University of Chicago

In most accounts of Eighteenth Dynasty genealogy, Amenhotep I is credited with two chief wives and numerous lesser ones. Of the chief wives, Ahhotep II has been considered the most important. Her coffin was among those found in the Deir-el-Bahri cache, and bears the titles: "king's daughter, king's sister, [king's] chief wife, who is joined with the white crown, king's mother." On funerary objects of the Ramesside period dedicated to Amenhotep I, she is frequently depicted in parallel with Ahmose-nefertari, the mother of that king, and she is also attested on a contemporary stela, that of her chief steward Kares, dated to year 10 of Amenhotep I's reign.

This paper concentrates specifically on Ahhotep II, reconsidering the evidence, and concluding that she is identical with Ahhotep I, and was the grandmother of Amenhotep I, rather than his wife. It also discusses the other wives of Amenhotep I and their relationship to him and to his predecessors.

An Eighteenth Dynasty Wall Painting in the Collection of the Oriental Institute Museum

David Silverman
University of Chicago

The Oriental Institute Museum possesses a fragment of a wall painting in which a man is pictured behind two oxen. Painted on mud plaster, the representation includes several texts that link the action portrayed to a funerary ritual. From the textual evidence and the stylistic and iconographic parallels, the fragment can probably be dated to the latter part of the Eighteenth Dynasty, and it bears striking resemblance to the workmanship of the paintings and the inscriptions in Theban Tomb 54 (Huy).

IW WN/ NN WN + Indefinite Noun in Middle Egyptian

Edmund S. Meltzer
University of Toronto

The definition of nouns before Late Egyptian has been a somewhat ambiguous area (e.g. Griffiths in JEA 54, 1968: 60-6; Wente in BiOr 22, 1965: 148-50). Here we make a suggestion which may clarify one aspect of this problem, and which has interesting historical implications.

It is well-known that in Coptic an indefinite nominal subject in the First Present is preceded by OYN̄- in affirmative, (M)MN- in negative sentences (Plumley §190). The possibility seems worth investigating that the nouns following iw wn and nn wn in Middle Egyptian ("existential sentences" and "negative universals") are indefinite.

The examples make good sense when taken thus, and this view is substantiated by the use of "virtual relatives" to modify these nouns (e.g. nḏs Ḏdi rn.f, Westcar VI,26, "a commoner whose name is Djedi;" ib n s rhn.tw ḫr.f, Lebensmüde 121, "a heart of a man on which one can depend"). Instances such as ist wn ḥmt.f (Peas. R2), "Now he had a wife," are no obstacle, as a suffix pronoun does not define in Middle Egyptian (Gard. §35 Obs. et passim); the noun remains indefinite in derived constructions (or, à la mode, transformations).

The idea of indefiniteness associated with iw wn seems even to persist in a sentence such as iw wn wr it m 3hw (Ptaḥḥotpe, Dévaud 171), "There is many a father in trouble," which Gardiner considers "a unique and interesting example" (§467).

For negative examples we have thought it soundest to confine ourselves to nn wn as the direct ancestor of (M)MN- and (with supression of iw, Gard. §107.2) the most direct negative correspondent of iw wn. Regarding the other existential negations, we follow Gilula's observation (JEA 56, 1970:211) that "The difference between them is not entirely clear ... although it seems that it is possible to distinguish special uses for each of them."

The Latest Phase in the History of East Karnak

Donald B. Redford
University Museum, University of Pennsylvania

One of the unexpected discoveries made by our excavations in East Karnak is the presence of domestic occupation in the area east of Ramesses II's East Temple in the 21st Dynasty and again from the 26th to 30th Dynasties, but at no later period. The occupation is in part industrial, in part residential, and a close examination of the ceramic and artifactual material yields some interesting evidence on the date and reason for the abandonment of this quarter of Thebes.

Herodotus and Egyptology on Lake Moeris and the Labyrinth

O. Kimball Armayor
University of Florida

Herodotus never mentions the Labyrinth of King Minos in Crete, but he does tell of an Egyptian Labyrinth greater than the pyramids, a memorial of the Dodecarchs, symmetrical, with two storeys, 12 courts, 3,000 chambers, of which he himself toured the upper 1,500, 12 kings and sacred crocodiles buried beneath it, a stone roof over everything, and a 40-fathom pyramid joined to a corner of it (ii.148).

Herodotus' Egyptian Labyrinth purports to have stood by, and a little above, a great Egyptian Lake Moeris, from which he could not find the earth taken in the digging of it, deep, north-south, man-made in the time of King Moeris, in a desert country seven days up the Nile, with a perimeter of 3,600 stades, equal to the whole Egypian seaboard, with two hundred-fathom pyramids in the middle and stone colossi seated on top of them, connected with the Nile by means of a channel flowing to and from the river six months at a time, and with the Libyan Syrtis by means of an underground extension to the west according to the natives, belonging both to Memphis and Thebes (ii.69, 149f.).

Strabo, Diodorus Siculus, and Pliny the Elder also tell of such an Egyptian Labyrinth.

Herodotus' account of the Labyrinth and Lake Moeris is one of great complexity. We ought to have analyzed its themes and components in the light of Egyptian legend and Greek literary tradition, and likewise we ought to have analyzed those of Diodorus and Strabo in the light of Herodotus. But in the face of a badly defective archeological record from the Graeco-Persian era, we merely seized on Herodotus' evidence of fifth-century Egypt. Ever since the 19th century and with little dissent, we have assumed uncritically that Herodotus and Strabo, at least, both saw the Labyrinth for themselves and wrote of it from autopsy. We have identified their Labyrinth with Petrie's inconclusive bed of XIIth-Dynasty chips at Hawara to the neglect of all other Egyptian sites, and their Lake Moeris with the diminutive pond of the Birket el-Qurun in the Fayoum basis some 55 miles southwest of Cairo, to the neglect of the ongoing controversy on the geological, pre-historical, and Early-Dynastic nature of the Fayoum.

But in so doing we have read Herodotus into the archeology of the Fayoum and used the results to confirm Herodotus. Therefore our method has been circular. What we really need to ask is, "What is the nature of Herodotus' account, and what independent authority, if any, do the later descriptions of antiquity possess?" What we really need to do is compare the literary evidence taken on its own with an unfettered survey of fifth-century Egypt taken on its own, and look at the record without preconceptions.

Herodotus and Egyptology on Lake Moeris and the Labyrinth (continued)

When we do so, Herodotus's Labyrinth and Lake Moeris can be seen as part of a Greek literary tradition that began with Homer and the saga of Theseus and the Minotaur and built itself on Egyptian legend among the early Greek soldiers and traders of Egypt. The great palaces of the Iliad and Odyssey are the beginning of Herodotus' Labyrinth. The Acheron of Homer and his scholiasts is the prototype of Herodotus' Lake Moeris. Later antiquity merely built on Herodotus and read him into their own Egypt just as we did.

Lake Moeris and the Labyrinth can hardly be confined to the Fayoum and there are many labyrinths in Egypt. To judge from Miss Caton-Thompson and Miss Gardner, and subsequent investigations, there was never a great Fayoumi lake in historical times. And whatever the nature of Petrie's XIIth-Dynasty Hawara, it may have been a good deal more modest than anything we have been led to believe since the French and Prussian expeditions of the 19th century.

The "Hymn to Osiris" as a Literary Monument

John L. Foster
Roosevelt University

In literary studies a distinction is sometimes made between a piece of literature as document and as monument. In the first case, the value of the piece is extrinsic, its significance lies beyond the piece itself, and it is used primarily as evidence for something else. In the second case, the value of the piece is intrinsic; it has significance in and for itself; it is enjoyed for itself; it has form, meaning, and beauty.

Translations of ancient Egyptian literature tend to treat the texts as documents; and accuracy of translation has traditionally been measured by the concept of the "literal" translation. Translation of the texts as monuments of literature, however, requires other, more complex, and more significant criteria for accuracy -- criteria which focus on literary concepts like character, emotion, and tone.

A translation of Louvre Stele C 286 (the long "Hymn to Osiris") will be read to show how one might utilize such criteria in attempting to recreate a piece of ancient religious verse.

The Egyptian Canons

Eleanor Guralnick
University of Chicago

The fact that there are two well known grinds for proportioning sculptured figures is no longer in question. Several scholars, beginning with Lepsius and including Edgar, Mackay and Iversen have brought these to our attention, providing evidence that two different grids exist and that they were used as an aid to obtaining properly proportioned sculptured and painted figures.

Some recent events have rekindled interest in this subject. Iversen recently offered a new edition of his classic explanation of the two canons for proportioning human figures. In this new edition he refutes his own previous argument, concluding that while there were two grids for proportioning the human figure, there was only one canon. In confirmation of this viewpoint he published a view of a figure carved according to one grid superimposed on a figure carved according to the other grid and noted that the silhouettes were quite similar.

A recent study of the proportions of archaic Greek sculptured figures was substantially concerned with the questions of the origin and evolution of the proportions of such figures. The possibility was considered that Greek sculptors borrowed an Egyptian canon as a model for proportioning Greek sculptures. Therefore the question of identity or difference between the two Egyptian canonic grids was explored. This study was executed in the IBM-370-185 computer at the University of Chicago. Two different statistical techniques were applied to this analytical problem, cluster analysis and principal components analysis. Statistical consultation was offered by members of the Statistics Department of the University of Chicago under the supervision of William H. Kruskal, Chairman of the Department. The research was sponsored by the National Endowment for the Humanities.

The above study included eight examples of the second canon grid for standing male figures, and two examples each of the second canon grid for standing female figures, the first canon standing male and female figures and four equivalent types of seated figures. Iversen's experiment projecting the image of a figure drawn according to one grid onto a figure drawn according to the other grid was repeated for several examples.

The following conclusions have been drawn from these studies. Figures reflecting the two grids are quite similar but not identical. The same differences are noted repeatedly. Figures drawn to a single grid are not always identical. Variety exists within canonic art. Grid oriented figures usually appear to be modular in their construction so the variation which does exist for a particular grid is regular, reflecting freedom within specific constraints. First and second canon figures are distinctive in specific ways. In relation to their height, second canon figures are more slender than first canon figures.

The Egyptian Canons (continued)

The waist and navel are located lower on the body so that the torso is elongated when compared to first canon figures. These differences are consistently seen. The computer studies readily distinguish the figures made according to the first grid from those made according to the second grid. Likewise, the computer studies suggest that some Greek statues of the seventh and sixth centuries, B.C. were carved in accordance with the Egyptian second canonic grid, as distinguished from the first canonic grid. It would seem that the use of two different grids is significant. Each of the two grids reflects a slightly different canon of proportions.

A Reconstruction of the Reliefs of Hesy-re

Wendy Wood
Western Illinois University

In the nineteenth century Mariette had the five best preserved reliefs removed from the southernmost five of the eleven stepped niches that articulate the west wall of the inner corridor chapel of the tomb of Hesy-re at Sakkara. In the season of 1911-12, Quibell recovered a sixth relief in fragmentary condition from the northernmost niche.

My reconstruction of the series and its significance in a decorative program built on the theme of offerings, reflecting the function of the space as an offering chapel, is based on the following assumptions: Quibell correctly interpreted the tomb as a variant of a two-niched mastaba in which the southern niche has been displaced by the doorway to the inner chapel; the reliefs are architectural sculpture and their sequence was governed by the architectural design; the decoration was continuous from wall to wall. From the reliefs that occupied Niches 1, 2, and 11 the iconography of the reliefs and the principles of duality and alternation that underlie the pattern can be deduced. The series can then be fully reconstructed. The demonstration that the reliefs should be interpreted in the context of the architectural design, the function of the architectural space, and the decoration of the chapel as a unified whole suggests that the identification of the object in Hesy-re's right hand in the fragmentary relief as a Re disk and the attributes as a rebus of Hesy-re's name, rejected by Fisher but proposed anew by Kadish, is correct.

The reconstruction is illuminating for a number of related problems: the interpretation of the two-dimensional figure composed of both frontal and profile elements, the sculptural program of the entrance colonnade of the Step Pyramid complex, the ancestry of scenes of tomb owners receiving the produce of their estates, and the significance of the seated and striding types in contemporary tomb statues.

Two Painters of the Tomb of Ramesses IV

C. A. Keller
San Francisco State University

The archeological remains and textual material gleaned from the excavation of the workmen's village at Deir el-Medina at Thebes have long been subjects of economic, religious, legal, and sociological studies - not to mention their importance as checks on the various chronological schemes proposed for the Ramesside Period. The village was established as a living area for the workmen engaged in the excavation and decoration of the royal tombs. But studies of the workmen have only rarely made reference to their "product" - the carved and painted reliefs in the tombs of kings and queens. Investigations have been carried out on the organization of the gang of workmen, their local cults, and the local administration of justice, but little attention has been given to that group of workmen most directly responsible for the tomb decoration - the painters and sculptors.

This paper focuses on some of the painters responsible for the work in several mid-XXth Dynasty royal tombs, and in particular that of Ramesses IV. The collection of figured ostraca in the Cairo Museum includes a group of practice-ostraca found in the tomb of Ramesses VI (no. 9) which pertain to the decoration of the tomb of the former king. Many of these pieces bear sketches signed by painters who can be shown by their genealogies to have been active during this period. To two of these painters, Amonhotep and Nebnefer, can be assigned nearly two-dozen of the pieces. A careful study of their respective groups of ostraca - in which details of line and proportion and idiosyncrasies in rendering certain features of costume and anatomy may be picked out - is the preliminary step in assigning responsibility for particular wall-scenes in the tomb to one (or the other) of these painters. Studies in artistic attribution are rather rare in Egyptology, but this specific case provides us with not only the names and genealogies of the painters, but with their practice sketches and finished works as well.

Ancient Egyptian Philosophy: A Re-evaluation

Bob Brier
C. W. Post College

In spite of the fact that the Greeks praised the Egyptians for their wisdom and philosophy, it is generally agreed that the ancient Egyptians did not do philosophy. In this paper I review the Greek sources to determine precisely what the Greek tradition was. This position is then compared with Egyptological evidence and modern writings on the subject.

The conclusion reached is that there is really no conflict between the Greek tradition and the Egyptological evidence. The modern writings against the possibility of Egyptian philosophy are either overstated or based on a confused notion of what philosophy is. Suggestions for a program to reconstruct Egyptian philosophy from existing sources are offered.

A Talatat Scene of Foreign Female Prisoners

Earl L. Ertman
University of Akron

Among the talatat blocks there is a representation of a line of bound foreign female captives. This unusual scene will be discussed in its archeological contents and the significance it has concerning the position of Queen Nefertiti.

Nofretity, 'Ankhesenamūn, and the Amka Affair

Alan R. Schulman
Queens College

In an attempt to reconcile the events which took place in the Amka and which are described in EA 170 and in the Annals of Suppiluliumas, Redford wishes to identify the Egyptian queens who wrote to Supplilumas for a son to be sent to her as husband to Nofretity, the widow of Akhenaton, and proposes to emend the Hittite text which clearly identifies the husband of the widow as Tutankhamun. He more recently supports this emendation in his discussion of a recently published inscription of Horemheb, from Byblos, which refers to Horemheb's first victorious campaign in his regnal year 7. Emendation of a text is methodologically a very chancy affair, as the late W. F. Edgerton used to stress, and should be avoided whenever possible. If one has to emend, however, it should be done with the utmost caution and hesitation. The present paper hopes to demonstrate how Redford's emendation is unnecessary in the cases of EA 170 and the Hittite Annals, but how the chronological problems raised by the new Horemheb text also can be resolved without forcing the evidence or emending.

Avoid Hard Work, Taxes, and Bosses: Be a Scribe!

Janet H. Johnson
University of Chicago

In this presentation, the extent to which the life of scribes as seen in New Kingdom texts and tomb illustrations measures up to the ideal of independence and ease presented in the Satire on the Trades is discussed.

The Rock-Cut Statue Niche as Decoration in Old Kingdom Tombs

Timothy Kendall
Museum of Fine Arts, Boston

Discussion will focus on recently taken slides of some of the more notable rock-cut tombs at Giza in particular, in which statue niches are a prominent feature. Views of the tombs of Meresankh, Qar, and Idu will be shown, as well as others of the remarkable unpublished tombs of Ankhmare and Kaherptah. Interiors of several uninscribed, unfinished tombs will also be illustrated, in which rock-cut statues may be seen in various states of completion.

Photographic Documentation of the Life Activities of the Contemporary Egyptian as They Reflect Those Shown in Pharonic Tombs: Agriculture and Preparation of Food

Ann Stewart Anderson
Louisville, Kentucky

Ancient artists and craftsmen left charming and complete records of the daily activities of early Egypt. Their paintings and carvings show the specific details of furniture making, ship building, tanning hides, harvesting wheat, milking cows, and constructing houses. Today's Egyptian, working to grow crops in a limited area, fishing canals which serve as irrigation channels and transportation systems, or weaving a straw mat, bears remarkable resemblance to his ancient ancestor. For, not only does he do the same things, he also tends to take postures similar to those shown in ancient tomb paintings.

I have taken my camera to Egypt, repeating the intent of the ancient artist, recording visually those aspects of the life which echo that of the ancient man and woman. Photographs made in tombs which were often inaccessible, except through the cooperation of the Egyptian Antiquities Service, are paired with those collected in areas of the countryside and in Cairo. The result is a record of numerous activities, a product of approximately one hundred pairs of photographs.

Interest was not limited to the mere recording of process and product. Every effort has been made to capture on film the spirit and compositional arrangement which lifted the ancient depictions from a level of simple documentation and elevated them to art.

This paper deals specifically with the similarities between ancient and modern agricultural processes such as clearing and preparation of the land, tending animals, bee keeping, harvesting and storing of grains and fibers. In addition it focuses on the processes of food preparation such as baking bread, slaughter of cattle, dressing fowl, cleaning fish, cooking in pots, and preparing of vegetables for cooking.

A Third Intermediate Period Mummy in the Minneapolis Institute of Art

Otto J. Schaden
University of Minnesota

The mummy of the Lady of the House, Tasha (T3-s̓3t), the daughter of the Doorkeeper of the Gold House of Amun, Thoth-hotep, has been a resident of the Minneapolis Institute of Art since 1916. The brightly decorated cartonnage and the inscribed coffin are virtually intact but for some minor restorations. Recent X-ray examinations of the mummy have revealed some interesting facts which may be of more than passing interest to ARCE members.

THE SMITHSONIAN INSTITUTION PROJECT IN MEDIEVAL ISLAMIC ASTRONOMY PROGRESS REPORT, 1972-76

David A. King, Field Director

The following is a summary of the progress reports submitted to the Smithsonian Institution for the four-year period 1972-1976, corresponding to the first phase of the project in medieval Islamic astronomy. It is anticipated that the second phase of the project will continue until 1980, subject to annual renewal by the Smithsonian Insitution.

Introduction

In October, 1972, a project was initiated at the American Research Center in Egypt to further our knowledge of the exact sciences astronomy and mathematics in medieval Islam. The project is sponsored and financed by the Smithsonian Institution. Additional financial support has been provided by the National Science Foundation (1972-76) and the American Philosophical Society (1972-74).

Unpublished manuscript sources relating to the history of the exact sciences in Islam exist in embarrassing profusion, and our present knowledge of the Islamic contribution in this area is based on the relatively small proportion of these documents preserved in European libraries which have been studied in the past two centuries. The main purpose in basing this project in Cairo was to collaborate with the Egyptian National Library in making a survey of the several thousand medieval scientific works preserved in the Library. This collection ranks in size with that of the Suleymaniye Library in Istanbul as the largest of its kind in the world, and is of particular interest to the History of Science and Islamic Studies because the vast majority of the manuscripts were, until recently, untouched by modern scholarship. Many of the manuscripts contain material compiled during the period from the ninth to the fifteenth century, when Muslim scholars were the leading scientists of their day. Cairo was an important center of astronomy from the tenth century onwards, and the present Cairo collection contains material originally compiled not only in Egypt but also in areas as far apart as Morocco, Turkestan, and the Yemen.

The survey of the Cairo manuscripts has involved the preparation of a critical catalog listing all of the manuscripts, and also of descriptions and analyses of works of particular importance. The nature of the research in Cairo has necessitated close collaboration with the numerous other manuscript libraries in Europe and the Near East.

The libraries of Berlin, Oxford, Paris, and Istanbul contain particularly rich collections of Islamic scientific manuscripts, many of which were originally of Egyptian provenance.

Dr. Owen Gingerich, the Principal Investigator of this project, is an astrophysicist at the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts, and Professor of Astronomy and History of Science at Harvard University. He holds degrees in astronomy from Goshen College and Harvard University, and is the President of the Commission on the History of Astronomy of the International Astronomical Union. Dr. Gingerich has played a major role in organizing support for the project and has visited Cairo annually to inspect its progress.

Dr. David King, the Field Director of the Project in Cairo, has been based at the American Research Center in Egypt since 1972. He holds degrees in Mathematics from Cambridge University, Education from Oxford University, and Near Eastern Languages and Literatures from Yale University. His interest in the Cairo collection was first aroused during his doctoral dissertation research on the works of the celebrated tenth century Cairo astronomer, Ibn Yūnus.

Dr. Edward Kennedy, the Principal Consultant, has been Professor of Mathematics at the American University in Beirut since 1946, and is currently on leave. He holds degrees in Electrical Engineering from Lafayette College and in Mathematics from Lehigh University, and in the past twenty five years has published six books and over fifty articles on various topics relating to astronomy and mathematics in medieval Islam. His Survey of Islamic Astronomical Tables, which appeared in 1956, listed over one hundred Islamic astronomical handbooks of the kind known in medieval Arabic as zijes, which contain extensive tables for planetary and spherical astronomy. Dr. Kennedy came to Cairo in the fall of 1976 to collaborate in the second phase of the project.

The Cataloging Project in the Egyptian National Library

Upon his arrival in Cairo in October, 1972, Dr. King developed the necessary contacts in close collaboration with Mr. John Dorman, former Cairo Director of the American Research Center in Egypt. On behalf of the Smithsonian Institution, Dr. King offered to Dr. Mahmoud Shineity, the Under-Secretary of the Ministry of Culture and Information in Cairo who has jurisdiction over the Cairo manuscripts, to make a survey of the vast holdings of scientific manuscripts in the Egyptian National Library in collaboration with the leading Egyptian authorities on the history of science. An agreement between the Library and the project specifying the nature of the research to be performed and the mode of publication of the results was signed in Cairo in June, 1973, with the understanding that work should begin in September, 1973. Dr. Gemaleddin Alfandy, former Professor of Astronomy and Meteorology at Cairo University was appointed by Dr. Shineity to direct the activities of all those involved in the work of cataloging the Cairo scientific manuscripts (until June 1975).

However, owing to the outbreak of war in Egypt in October, 1973, and the delays in the transfer of all the Cairo manuscripts from their previous location to the new building of the Egyptian National Library, access was not granted to the main body of the Cairo scientific manuscripts until June, 1974.

The survey of the Cairo manuscripts begun in June, 1974, involved first classifying each of the manuscripts in the collection according to their contents. There are about five thousand astronomical and mathematical works in the Library, contained in about two thousand manuscript volumes and dealing with a multiplicity of topics from sophisticated mathematical astronomy to popular astrology. These works range in size from handbooks of several hundred pages of text and tables, to notes and individual tables on a single page. The vast majority of these works are in Arabic, the remainder being in Persian and Turkish.

By the summer of 1975, index cards had been prepared giving titles, authors, and dates of copying, as well as library identification numbers and folio numbers. Each work was classified according to the nature of its contents according to the following divisions:

1 General astronomical works
2 Astronomical handbooks with tables (zījes)
3 Astronomical timekeeping
4 Astronomical instruments
5 Astrology
6 Mathematics
7 Physics
8 Non-scientific topics

which were further subdivided thus, for example:

4.1 General treatises on instruments
4.2 Armillary sphere
4.3 Astrolabe
4.4 Almucantar Quadrant
4.5 Sine quadrant
4.6 Miscellaneous universal astrolabes and quadrants
4.7 Sundials
4.8 Miscellaneous instruments

In a second phase of the survey, all works in a given subsection were investigated systematically and all copies of a given work were inspected simultaneously. The works in each subsection were arranged chronologically, and extracts were prepared for all works of consequence. In a third and final phase of the survey, the manuscripts were inspected again in order of the library classification system, to ascertain that each separate part of each manuscript had been accurately identified and adequately described and to insert details about the manuscripts such as the size, the nature of the handwriting, the name of the copyists, and marks of ownership. This final phase is to be completed in the fall of 1976.

Dr. King was assisted in the first and second phases of the survey by Dr. Imam Ibrahim Ahmad, Professor of Astronomy at Cairo University, and Dr. Shahinaz Yusuf, Lecturer in Astronomy at Cairo University. Secretarial assistance was provided in the Egyptian National Library by Mr. Shaaban Rabie (from March 1975 to January 1976) and Miss Khulud Mustafa (from March 1976). Many of the preliminary extracts from the manuscripts were copied by Miss Khulud Mustafa, and Miss Manar Rateb of the American University in Cairo. The mammoth task of typing successive drafts of all the material for the catalog, the final draft of which amounts to about 5000 pages of typescript, is being carried out with the untiring devotion of Mrs. Nabila Hajj, (from October 1972) and Mr. Husein Makram (from June 1976), secretaries to the Smithsonian Institution Project.

The resulting catalog, to be submitted to the Egyptian National Library for publication at the end of 1976, consists of four parts, three in Arabic and the fourth in English. First, a description of the work contained in the manuscripts arranged chronologically according to subject matter. Second, a handlist of the entire scientific collection. Third, indexes of authors, titles, and copyists. Fourth, an English index arranged in such a way as to supplement the standard bibliographical works of H. Suter, H.P.J. Renaud, M. Krause, C. Brockelmann, and F. Sezgin, and to include references to related secondary literature, in particular the studies on Cairo manuscripts of particular importance that have already been conducted or are currently in progress.

The Egyptian National Library has agreed to the preparation of an additional volume of plates taken from manuscripts of particular historical or scientific interest, and to the publication of a series of reproductions by photo-offset of selected important manuscripts.

Outline of the Related Research

In addition to the catalog of the Cairo scientific manuscripts, other studies are being prepared in English to survey all known astronomical works deriving from the related scientific traditions in Egypt, Syria, and the Yemen. These studies are based on manuscripts preserved not only in Cairo but also in Damascus, Istanbul, and Europe. Similar surveys should be conducted for the astronomical manuscripts pertaining to the different traditions in North Africa and Iran, but this is a task for the future. For the present, descriptive monographs or papers are being prepared on manuscripts or groups of manuscripts found to contain material of interest not previously known to exist, and are being submitted to the leading international journals for the History of Science and Islamic Studies.

The two years which passed before access to the Cairo manuscripts was granted were spent on research of the kind that had been envisaged for the project after the cataloging of the Cairo collection had been completed.

The major work undertaken during this period was the first serious study of astronomical timekeeping in medieval Islam. Virtually no Islamic tables for timekeeping had been previously described in the modern literature. The study conducted described the tables that were used in the major centers of civilization in the medieval period, and traced the development of such tables from the simple examples compiled in Abbasid Baghdad to the highly sophisticated tables used in later Cairo and Damascus and, hence, to the modern tables for the times of prayer which are displayed in almanacs, diaries, and newspapers.

Contacts with Libraries Outside Cairo

During the academic years 1972-76, Dr. King made several visits to the Municipal Library, Alexandria, and to the Arab League Institute of Arabic Manuscripts, Cairo, and also inspected medieval scientific manuscripts in the Zahiriya Library, Damascus; the Awqaf Library, Aleppo; the Bodleian Library, Oxford; the Bibliotheque Nationale, Paris; the Forschungsbibliothek, Gotha; the Nationalbibliothek, Vienna; the Grand Mosque Library, Sanaa, and several private libraries in the Yemen; the Süleymaniye Library and other libraries in Istanbul, notably the Library of Kandilli Observatory; the Ambrosiana and Laurenziana Libraries in Milan and Florence; the British Library and India Office Library in London; and Cambridge University Library.

Dr. King also met annually with Professor Fuat Sezgin in Frankfurt; Professor Sezgin is preparing a comprehensive survey of all medieval Arab scholars and their works (Geschichte des arabischen Schrifttums, published by E. J. Brill, Leiden) and is currently working on manuscripts relating to the history of mathematics and astronomy.

A library of about 250 microfilms of Arabic scientific manuscripts preserved mainly in European libraries has been collected by the project in Cairo. Copies of many of these have been deposited with the Egyptian National Library.

Lectures Relating to the Research of the Project (1972-77)

1972: "Current Research in Islamic Astronomy," American University in Cairo (King)

1973: "Islamic Astronomy," Cairo University (King)

"The Copernican Revolution" and "The Astrolabe in Medieval Astronomy," Academy for Scientific Research and Technology, Cairo (Gingerich)

"Astronomical Timekeeping (ʿilm al-mīqāt) in Medieval Islam," 29th International Congress of Orientalists, Paris (King)

1973: (cont'd) "Current Research on Medieval Islamic Astronomical Tables," Colloquia Copernicana, Poland (King)

"Astronomy in Medieval Egypt," Institut d'Egypte, Cairo (King)

1974: "Some Astronomical Manuscripts from Medieval Yemen," Sanaa University and Institut d'Egypte, Cairo (King)

"Some Solar Puzzles," Academy for Scientific Research and Technology, Cairo (Gingerich)

"Islamic Astronomy before Copernicus," Helwan Observatory (King)

1975: "The Cairo Scientific Manuscripts," the 185th Annual Meeting of the American Oriental Society, Columbus, Ohio (King)

"Selected Topics in Medieval Islamic Astronomy," Department of the History of Science, Harvard University, Cambridge, Massachusetts (King)

"The Islamic Aspects of Islamic Astronomy," Institut für Geschichte der Naturwissenschaften, Frankfurt (King)

"Medieval Islamic Planetary Theory," American University in Cairo (Kennedy)

1976: "Al-Bīrūnī's Second Order Interpolation" (Kennedy) and "Astronomical Timekeeping in Fourteenth Century Syria" (King), The First International Symposium for the History of Arabic Science, University of Aleppo

"Astronomy in Medieval Islam," Officers' Club, Canadian U.N.E.F. H.Q., Ismailia (King)

"Astronomy in Medieval Yemen," Seminar for Arabian Studies, University of Cambridge (King)

1977: "Will the Universe End with a Bang or a Whimper?" Academy for Scientific Research and Technology, Cairo (Gingerich)

"The Origin of the Definitions of the Daytime Prayers in Islam," the 187th Annual Meeting of the American Oriental Society, Ithaca, New York (King)

"Current Research in Cairo on Medieval Islamic Science," Annual Meeting of the American Research Center in Egypt, Detroit, Michigan (King)

"Some Newly Discovered Categories of Islamic Astronomical Tables," Department of the History of Mathematics, Brown University, Providence, Rhode Island (King)

1977: (cont'd) "The Determination of the Prayer-times and the Direction of Mecca in Medieval Islam," Stanford University, Palo Alto, California

Computer Work in Cairo

Mathematical tables in medieval sources can be recomputed once the underlying formula and astronomical or geographical constants have been determined: such recomputation greatly facilitates analysis of medieval tables and assessment of their accuracy. A set of programs was compiled in 1972-73 at the Computer Center, American University in Cairo, for computing all of the standard planetary and spherical astronomical tables found in the medieval Islamic sources. Computer time is made available by the Smithsonian Institution. The administration of the American University in Cairo, and especially Dr. Salah Hamid, Director of the Computer Center, have afforded every possible facility to the project.

Material Published and Submitted for Publication (1972-77)

Each of the following papers and monographs bears the name of the Smithsonian Institution Project and the American Research Center in Egypt. Acknowledgements to the National Science Foundation and American Philosophical Society are given where appropriate.

The following articles and monographs were published or accepted for publication in the years 1972-76:

(1) "Ibn Yūnus' Very Useful Tables for Reckoning Time by the Sun," Archive for History of Exact Sciences, 10 (1973), pp.342-394.

A description and analysis of the main corpus of astronomical tables which was used for timekeeping and regulating the prayer-times in Cairo throughout the Middle Ages and up to the nineteenth century, based on seven manuscripts preserved in Cairo and various European libraries. This corpus was not previously known to exist.

(2) "A Double-Argument Table for the Lunar Equation Attributed to Ibn Yunus," Centaurus, 18 (1974), pp. 129-146.

A description and analysis of an extensive table for finding the position of the moon, probably compiled in tenth century Cairo. The analysis illustrates how this table now preserved in a manuscript in the Egyptian National Library in Cairo was compiled using another table now preserved in the British Museum in London, which in turn is based on other tables now preserved in the University Library, Leiden.

(3) "On Medieval Islamic Multiplication Tables," Historia Mathematica, 1 (1974), pp. 317-323.

A description of the various kinds of multiplication tables used by medieval Muslim scholars. These tables are based on the sexagesimal system (base 60) rather than the decimal system (base 10).

(4) "An Analog Computer for Solving Problems in Spherical Astronomy: the Shakkāzīya Quadrant of Jamāl al-Dīn al-Māridīnī," Archives Internationales de l'Histoire des Sciences, 24 (1974), pp. 219-242.

A description of an instrument attributed to an early fifteenth century Egyptian scholar, based on two manuscripts preserved in Damascus. This instrument is related to the universal lamina of the eleventh century Andalusian astronomer al-Zarqāllu (Azarquiel).

(5) "al-Khalīlī's Qibla Table," Journal of Near Eastern Studies, 34 (1975), pp. 81-121.

An analysis of a highly sophisticated table prepared in fourteenth century Damascus, which displays the direction of Mecca as an angle in degrees and minutes measured from the meridian, for all terrestrial latitudes and longitudes. The study is based mainly on two manuscripts preserved in Paris and Berlin, which are the only known copies of this table. An appendix to this paper includes references to four other such tables prepared by earlier Muslim scholars but based on approximate formulae, and illustrates the development of such qibla tables from the ninth to the fourteenth century. It was not previously known that the Muslim astronomers compiled tables for finding the qibla.

(6) "On the Astronomical Tables of the Islamic Middle Ages," Studia Copernicana, Colloquia Copernicana III, (1975), pp. 37-56.

A preliminary survey of the various categories of astronomical tables used by medieval Muslim astronomers and not generally contained in the astronomical handbooks known as zījes. (Thus these tables were not mentioned in E.S. Kennedy's survey of Islamic zījes - see p. 20 above.) They include multiplication tables (see no. 3 above); trigonometric tables with entries for each minute of argument; tables for timekeeping by the sun and stars, for regulating the times of Muslim prayer, and for solving standard problems in spherical astronomy (see no. 1 above and no. 18 below): tables displaying the direction of Mecca as a function of terrestrial latitude and longitude (see no. 5 above); tables of coordinates for marking the curves on astrolabes and sundials (see Section 8 below); and tables displaying planetary equations as functions of arguments that can be taken directly from tables of planetary mean motions, thus obviating the need for any calculations in determining planetary positions (see, for example, no. 2 above).

(14) "Astronomical Timekeeping in Fourteenth Century Syria" (in English and Arabic), to be published in the Proceedings of the First International Symposium on the History of Arabic Science (Aleppo, 1976).

A description of the works on astronomical timekeeping by the three leading astronomers associated with the Umayyad Mosque in Damascus in the fourteenth century: Ibn al-Shāṭir, al-Khalīlī, and al-Mizzī. None of these works had been studied previously.

(15) "Astronomy in Medieval Yemen" to be published in the Proceedings of the Seminar for Arabian Studies (Cambridge, 1976). Also a chapter on the same subject in the volume Sanaa: an Islamic City, ed. R.B. Serjeant, to be published under the auspices of the Festival of Islam, London.

Some brief remarks (see no. 19 below)

(16) "Ibn Yunus and the Discovery of the Pendulum," to be published in the Journal for the History of Arabic Science (Aleppo).

An investigation of the development in the modern literature of the attribution of the discovery of the pendulum to the tenth century Egyptian astronomer Ibn Yūnus.

(17) Book reviews:

B.R. Goldstein, al-Bitrūjī: On the Principles of Astronomy, Yale University Press, 1971, in Journal of the American Oriental Society, 93 (1973), pp. 566-567.

A.S. Saidan, History of Arabic Arithmetic (in Arabic). Amman, 1972, in Isis, 64 (1973), pp. 123-125.

E.S. Kennedy and D. Pringree, The Astrological History of Mashā'allāh, Harvard University Press, 1971, in Journal of Near Eastern Studies, 33 (1974), pp. 158-160.

S. Ahmed and R. Rashed, The Algebra of Samaw'al al-Maghribī (in Arabic), Damascus, 1972, Isis, 67 (1976), pp. 307-308.

E.S. Kennedy, A Commentary upon Bīrūnī's Kitāb Taḥdīd al-Amākin, Beirut, 1973, to appear in Centaurus.

D.R. Hill, The Book of Knowledge of Ingenious Mechanical Devices: Kitāb fī ma'rifat al-hiyal al-handasīya, Dordrecht and Boston, 1974, in History of Science, 13 (1975), pp. 284-289.

B.R. Goldstein, The Astronomical Tables of Levi ben Gerson, New Haven, 1974, to appear in Isis.

F. Sezgin, Geschichte des arabischen Schrifttums, Band V: Mathematik, Leiden, 1974, to appear in Journal of the American Oriental Society.

(7) "On Astronomy in Medieval Egypt," Bulletin de l'Institut d'Egypte, 1976.

Brief remarks on our knowledge of the subject prior to the study of the Cairo astronomical manuscripts (see nos. 12 and 22 below).

(8) "On Some Astronomical Manuscripts from Medieval Yemen" (in Arabic and English), Bulletin de l'Institut d'Egypt, 1976.

Brief remarks on some recently discovered manuscripts testifying to a sophisticated tradition in mathematical astronomy in medieval Yemen (see no. 19 below).

(9) "Astronomical Timekeeping ('ilm al-mīqāt) in Medieval Islam," Actes du XXIX^{e} Congrès international des Orientalistes, (Paris: L'Asiathèque, 1973), II: 2, pp. 86-90.

Some brief remarks (see no. 18 below).

(10) "A Fourteenth Century Tunisian Sundial for Regulating the Times of Muslim Prayer" to appear in a Festschrift in honor of Professor Willy Hartner, Frankfurt.

A description of a sundial now preserved in the Musée National in Carthage and an analysis of its various markings. This paper includes some preliminary remarks about a tradition of mathematical astronomy in medieval Tunis, and a hypothesis about the origins of the definitions of the daytime prayers in Islam.

(11) Articles "al-Khalīlī," "Ibn al-Shāṭir," and "Ibn Yūnus" in the Dictionary of Scientific Biography, and article "Ḳibla" (mathematical aspects) in the Encyclopaedia of Islam, 2nd ed.

(12) Spherical Astronomy in Medieval Islam: the Hākimī Zīj of Ibn Yūnus (400 typescript pages) to be published by the State University of New York Press under the auspices of the Society for the Study of Islamic Philosophy and Science, New York.

An analysis of the trigonometry and spherical astronomy in one of the most significant astronomical handbooks of the Islamic Middle Ages, compiled in tenth century Cairo and now preserved in two manuscripts in Leiden and Oxford. (Most of the research for this study was conducted before the initiation of the project in Cairo.)

(13) "New discoveries concerning the role of Muslim scholars in the advance of astronomy during the Islamic Middle Ages" (in Arabic), al-Hadāra, 1 (1976).

Some brief remarks for the general reader, illustrated with photographs of manuscripts in the Egyptian National Library.

Also "The First International Symposium on the History of Arabic Science: Aleppo, 1976" (in Arabic), ibid.

D.R. Hill, On the Construction of Water-Clocks: Kitāb Arshimīdas fi 'amal al-binkāmāt, London, 1976, to appear in History of Science.

Publishers are being sought for the following monographs:

(18) Studies in Astronomical Timekeeping in Medieval Islam. Part I: A Survey of Islamic Tables for Reckoning Time by the Sun and Stars (300 typescript pages) and Part II: A Survey of Islamic Tables for Regulating the Times of Prayer (400 typescript pages, not complete).

The first part of this monograph consists of a mathematical analysis of all known Islamic tables for astronomical timekeeping, based on about 200 unpublished manuscripts. The second part consists of a similar survey of all known medieval tables for regulating the astronomically defined times of Muslim prayer, based on about 300 manuscripts. Virtually none of these tables had been studied previously: in fact it was not known that tables of this kind were compiled by the astronomers of medieval Islam in such profusion. About one quarter of the manuscripts used in these studies are preserved in Cairo, and about one half are of Egyptian provenance.

(19) Mathematical Astronomy in Medieval Yemen: A Bibliographical Survey (100 typescript pages).

A critical survey of about one hundred Yemeni astronomical manuscripts attesting to an active tradition in mathematical astronomy in the Yemen from the tenth century until the turn of the present century. The Yemeni astronomical works investigated include some 16 astronomical handbooks known as zījes and extensive tables for timekeeping computed for the latitudes of Sanaa and Taiz. Several of the manuscripts discussed contain material borrowed from earlier Iraqi and Egyptian sources that are no longer extant in their original form.

(20) "The Universal Astrolabe of Ibn al-Sarrāj" (60 typescript pages).

A description of the sole surviving example of an Islamic universal astrolabe, constructed in fourteenth century Syria and now preserved in the Benaki Museum in Athens. The use of the instrument is illustrated from a treatise on the subject by the astronomer who made the instrument, now preserved in the Egyptian National Library.

(21) "Le cadran solaire de la mosquée d'Ibn Ṭūlūn au Caire," (30 typescript pages, prepared in collaboration with M. Louis Janin, Paris).

A description of a thirteenth century sundial formerly in the Mosque of Ibn Ṭūlūn in Cairo and lost in the early nineteenth century, though not before its markings had been traced by one of Napoleon's scholars. The sketch of the sundial has been published previously, but the present study includes a detailed analysis of its markings and an account of the tables that were used by medieval Egyptian astronomers to construct such sundials.

The following study was begun during the first stage of the project, and will be completed during the second stage:

(22) Mathematical Astronomy in Medieval Egypt and Syria: a Bibliographical Survey

A critical survey of several hundred Egyptian and Syrian astronomical manuscripts preserved in the libraries of Cairo, Damascus, Istanbul, and Europe. The material is being arranged chronologically according to author, and the survey will include descriptions of each of the works listed. (see also no. 18 above for a similar survey of mathematical astronomy in medieval Yemen.)

Future Research Possibilities

A second phase of the project began upon completion of the cataloging project in the Egyptian National Library in the fall of 1976. In November, 1976, Dr. Kennedy joined Dr. King in Cairo to collaborate in this new phase of the research. A hard currency grant from the Ford Foundation has been awarded to the American Research Center in Egypt during 1976-78 for the purchase of microfilms and materials relating to the research of the project. The National Science Foundation has expressed an interest in continuing its support to the project until 1980.

Now that the scientific manuscripts in the Library have been cataloged for the first time, there is an obvious need for the preparation of detailed descriptions and analyses of the most important manuscripts that have been identified during the cataloging project. It is hoped that the leading Egyptian scholars will be involved in this research. Already Dr. Kennedy has made a survey of some of the most interesting Persian astronomical manuscripts in the Egyptian National Library, a few of which are unique. Among the latter are two astrological works containing detailed prognostications for the various stages of the lives of two individuals, and including all of the relevant astronomical calculations. The survey of these Persian manuscripts is now being prepared for publication.

It is also proposed to continue the series of monographs prepared during the first phase of the project to include further studies of selected topics that are both of considerable interest to the history of science and that have not been properly investigated in modern times. These topics will include, for example:

(a) the problem of lunar crescent visibility as discussed by the Muslim astronomers (the Muslim calendar is lunar and the determination of certain religious festivals depends upon the sighting of the crescent);

(b) the development of the universal astrolabe in Islam (the regular planispheric astrolabe, on which there is a substantial literature, serves only specific latitudes - the universal astrolabe, which can be used to solve problems of spherical astronomy for all latitudes, has not been adequately studied);

(c) the development of the tables of coordinates that were used by Muslim astronomers from the ninth to the nineteenth century for marking the curves on astrolabes and sundials (there is virtually no published material on this tradition).

The major task to be tackled in the second phase of the project is the preparation of a comprehensive survey of the Islamic astronomical handbooks called zījes, of which over one hundred were identified by Dr. Kennedy in the 1950's and several dozen new examples have come to light during the past few years. The zījes, extensive works containing text and tables, may be considered the most important class of scientific documents from the medieval Islamic period, and such a study will surely add much to our knowledge of the development of mathematical astronomy in Islam. The survey will include not only information on the authors and layout of the zījes but will also list the basic parameters underlying the planetary and spherical astronomical tables, since this is the most reliable method for ascertaining interrelationships between such works. Much of the preliminary research for this survey has been conducted already by Dr. Kennedy in Beirut. It remains to expand this research and incorporate the new material discovered in libraries around the world during recent years, using the unique combination of library, microfilm, computer, and secretarial facilities available to the Cairo project, and to prepare the results for publication.

مركز البحوث الأمريكي بمصر

POLITICAL JOURNALISM AND THE 'URABI REBELLION

William R. C. Phelps
University of Michigan
ARCE Fellow, 1976-77

There is nothing particularly mysterious about the events of the period of Egyptian history known as the "'Urābī Revolt." The challenge to the Khedive Tawfiq by the military movement led by the fellah colonel, and the social and political causes of that movement, have already been examined by both Arab and western scholars.

One aspect of the movement has not, however, been investigated thoroughly: the ideological basis of the revolt. What, in the end, was the goal of 'Urābī and his followers? Were they nationalists in any modern sense of the term? Was the revolt motivated by religious feeling? Was there an element of "class struggle?" How did the participants themselves view what they were doing?

By happy coincidence, the period of the Revolt was contemporary with the first flowering of a political press in Egypt. Muḥammad 'Alī had, of course, established the first so-called Egyptian "newspaper," al-Waqā'i' al-Misriyah, in the 1820's and in ensuing decades various pioneers founded journals purporting to serve the public through the dissemination of generally edifying and enlightening information. But not until the 1870's was there a sudden surge of journalistic activity. Native Egyptian intellectuals, augmented by refugees from Syria and Lebanon whom the Khedive Ismā'īl encouraged for his own purposes, abandoned their artistic endeavors to enter the new and still untried field of political journalism. The whole enterprise was inspired if not guided by the example of Jamāl al-Dīn al-Afghānī, who was expounding his doctrines of revolutionary change to a small circle of intimates at Al-Azhar. But the resilience of these newspapers even after Al-Afghani's exile in 1879, and the restrictive press law of 1881, appears to demonstrate that they answered a felt need among intellectuals of the time.

The purpose of my project was to use both literary analysis and historical method to trace the formative period of Egyptian political journalism -- 1876-1882 -- and relate its development to the political events of the time. In so doing, I hoped to be able to demonstrate that the press was used consciously as an instrument of political propaganda, and that the atmosphere created by this novelty had some influence on the activities of the army men who led the 'Urābist movement.

By consulting various works in Arabic on the Egyptian press (since almost nothing on the subject exists in English or any other western language), I was able to assemble a list of the newspapers I would want to consult once I arrived in Egypt; from the Egyptian National Library's Fihrist al-Dawriyāt I concluded that (subject, of course, to unforeseen difficulties) it seemed as though enough newspapers were still extant to make the whole project worthwhile. I also decided that, if time and bureaucracy permitted, it would be interesting to look at the material on the 'Urābī Revolt stored in the Dār al-Wathā'iq in the Citadel.

It is, as those of us interested in such things soon realize, one thing to get access to the National Library and quite another to obtain a permit for the Dār al-Wathā'iq. The former, once one is equipped with the necessary letters from the ARCE, can take as little as five minutes. Once admitted, I found that the periodicals are divided into three collections: the Dawriyāt themselves, which are available to anyone with the general permit; and the Zakiyah and Taymūr collections, access to which requires additional bureaucratic maneuvering which is not overly time-consuming. The Dawriyāt, though generally in good condition, have unfortunately developed large gaps since the Fihrist was printed, and several newspapers from my period were simply not available. This difficulty was partially overcome by duplicate copies in the other two collections, which additionally provided the pleasant surprise of containing copies of newspapers which, according to the Fihrist, are not even supposed to exist. Thus, by the end of five months' work I was able to see substantially everything I had come for.

The permit for the Dār al-Wathā'iq took seven weeks to acquire (which apparently is rather less time than in previous years), and involved a long security investigation. Unfortunately, because of the delay I was not able to spend as much time there as I would have liked. I did, however, ascertain that the 'Urābī cartons are very easy to use, as each one has a complete, typed index which summarizes the contents. As far as I could see, there was little there which had any direct bearing on my subject.

Although I have not yet completed the final translations and organization, my work of the past nine months has led me to some tentative conclusions. First of all, the news-gathering function which we have come to expect from newspapers in the West was subordinated to the editor's own particular purposes, be they to educate, persuade, or propagandize. One reason for the lack of hard news was, of course, the simple physical difficulty of news-gathering and transmission: there were no telephones and these papers operated with very small staffs. Nevertheless, most editors subscribed to Reuters and Havas for their foreign news which, however, consisted primarily of articles and editorials on the "Egyptian Question" taken from foreign --

British and French -- newspapers. For domestic news they relied on "correspondents" in various parts of Egypt who contributed articles on topics such as irrigation, crop yields, or the level of the Nile flood, or more abstract subjects such as the plight of the peasants.

Thus, the most interesting aspect of these papers for my purposes was the editorials. As suggested above, the journalists of this period saw themselves as more than simple informers of the public, publishing "all the news that's fit to print;" and in editorial after editorial the notion is expounded that the role of the newspaper is not merely to print information, but to educate for the greater purpose of equipping the Arabs for their battle with western power and culture. These writers took it upon themselves to explain such concepts as "the constitution," "the role of religion in politics," and patriotism. Such ideas were but recently arrived in the Arab world, and imperfectly understood; but they were seen as the basis for the technological supremacy and political stability of the West, and the unspoken thesis was that they could produce the same results for the East. Moreover, the hope was that these concepts could be adopted without doing violence to the "Orientalness" of Arab society. Newspapers were to be the vehicle for their dissemination.

The defect in this chain of reasoning was that most writers were so enamored of the ideas they were promoting that they gave little thought to how they could be applied to Egypt's concrete situation. "Nationhood" and "patriotism" were never connected with the idea of independence from the Ottoman Empire; the notions of "constitutional government" or a "parliament" do not, at least until the summer of 1882, seem to have brought the role of the Khedive into question. Obviously, there was a great deal of justice in the recurring complaints of the high-handed nature of foreign -- meaning European -- interference in Egyptian affairs; but there is no corresponding insinuation that a large element of Egypt's ruling class, which, after all, bore some responsibility for the country's present difficulties, was also of foreign origin.

This discrepancy suggests the limits within which these journalists had to operate. The most important, of course, was that these newspapers existed ultimately at the pleasure of the government, which demonstrated over and over that it was not afraid to use its power to punish those who overstepped their bounds. The journalists' independence was further compromised by the fact that they were often subsidized by one political faction or another. And finally, the physical limitations of the format itself -- the ephemeral quality of the newspaper, the exigencies of space which introduced the necessity for the essay form -- precluded any deep consideration of ponderous philosophical questions.

Despite these drawbacks, the nascent Egyptian press did manage to accomplish one thing: to provoke a lively, somewhat naive, but not altogether shallow, debate on the question of the future of the East versus the West. This question was, of course, not a new one; these journalists had as their predecessors the early nineteenth century travelers to Europe who reported and commented on what they found there. But this time the question was raised in a new form of mass media in a conscious effort to create a public opinion in favor of reform. These journalists, to be sure, at first overrated the power of their new enterprise; and in the aftermath of the battle of Tal al-Kabīr and the British occupation, the reaction of many of them was bitter. But despite the apparent failure of this first phase of journalistic activity, certain positive results were forthcoming: many of the men who were to become intellectual leaders during the Occupation -- Muḥammad 'Abduh, 'Abd Allah Nadīm, Sa'd Zaghlūl -- first saw their work in print during this period, and learned the value of propaganda; and the press of the time provided a model for the later nationalist papers which grew up during the Occupation and proved to be a potent rallying force against the British.

مركز البحوث الأمريكي بمصر

THE SECOND SEASON OF THE NAG HAMMADI EXCAVATION

22 NOVEMBER-29 DECEMBER 1976

by

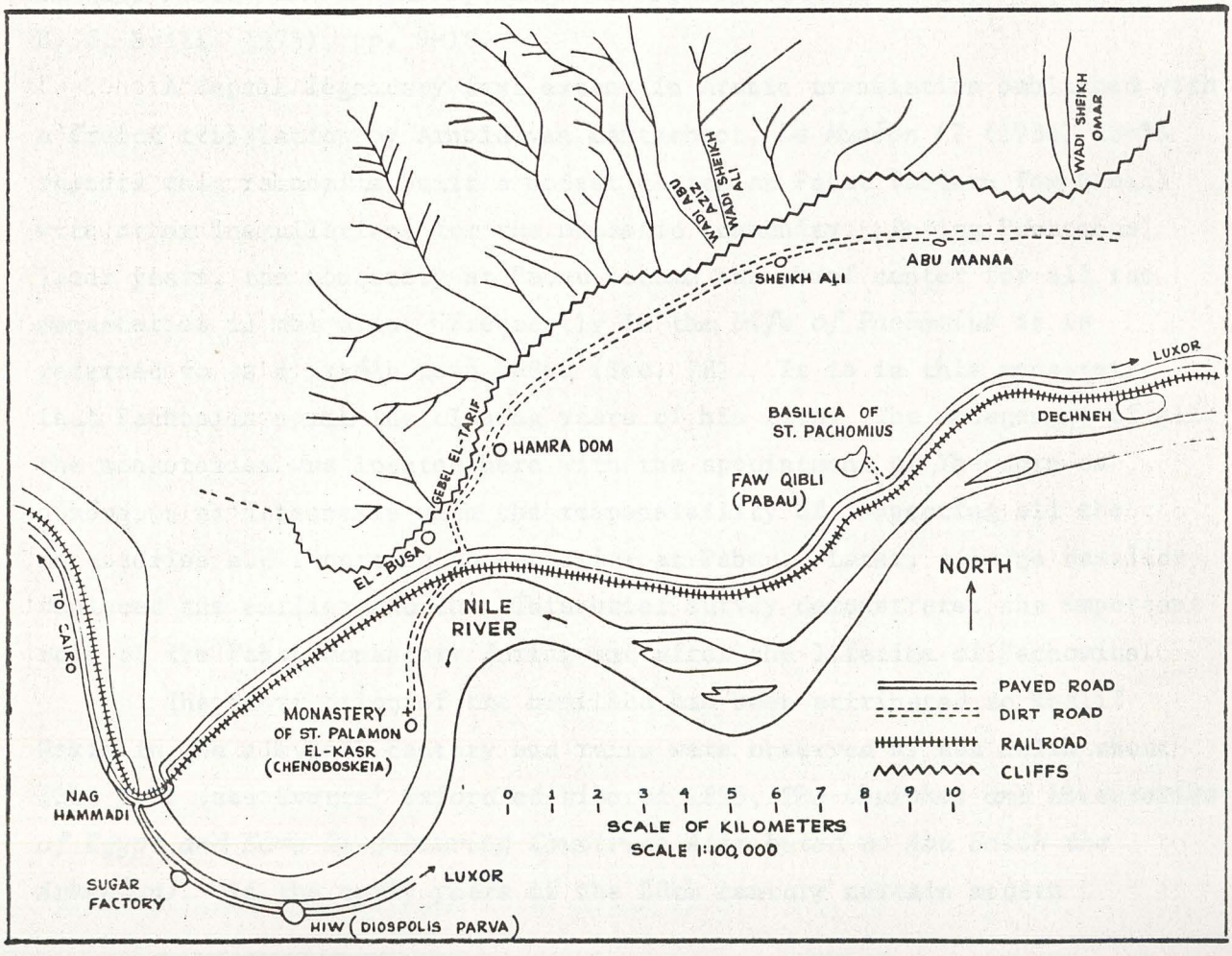
Bastiaan Van Elderen
and James M. Robinson

From mid-November to the end of 1976 a second season of archaeological work in the vicinity of Nag Hammadi was conducted. The first season, conducted from mid-November to mid-December 1975, was reported in the *ARCE Newsletter* 96 (Spring 1976) and in the *Göttingen Miszellen* 22 (1976). The general objective for both seasons, and also for projected seasons, is to investigate early Christianity in Upper Egypt, especially as it relates to two major manuscript discoveries near Nag Hammadi a generation ago--the Gnostic Papyri and some of the Bodmer Papyri. The work in the 1976 season concentrated primarily on the excavation of the ruins of the monastery-basilica complex of St. Pachomius, located in the modern village of Faw Qibli, 9 km. east of the Gebel el-Tarif or 18 km. northeast of Nag Hammadi (as the crow flies), on the north side (right bank) of the Nile River. Secondary objectives were the continuation from the previous season of the clearing of tombs in the Gebel el-Tarif, a survey of el-Kasr (Chenoboskeia), and a survey of the wadis north of these locations where some of the Bodmer papyri seem to have been discovered.

The staff of the 1976 season consisted of Dr. James Robinson, principal American investigator; Dr. Bastiaan Van Elderen, acting field director; Dr. Peter Grossmann of the German Archaeological Institute in Cairo, architect (with Mark Lehner and Stephen Emmel as assistants); Douglas Kuylenstierna, photographer. The following served as square supervisors: R. Scott Birdsall, S. Kent Brown, Michael B. Fiske, Hugh E. Haggard, Charles W. Hedrick, and Marvin W. Meyer. The expedition again enjoyed the full cooperation of Prof. Gamal Mokhtar, President of the Egyptian Antiquities Organization and of Director Paul Walker of the American Research Center in Egypt. Dr. Hanny Zeiny, Director General of the Nag Hammadi Sugar Factory and Distillery, was again most helpful and hospitable in providing housing facilities, contacts, advice, and assistance in the

organization and completion of the season's work. Mahmoud Ali of Nag Hammadi, Inspector for Islamic and Coptic Antiquities of the Kena region, again represented very helpfully the Egyptian Antiquities Organization; for part of the season he was assisted by Inspector Hussein of Kena. Finally, a word of especial appreciation is due to Dr. Labib Habachi, the dean of Egyptian archaeologists, whose counsel and support have been invaluable in the mounting of this excavation, though his responsibilities in connection with the International Congress on The Future of Coptic Studies kept him in Cairo. Although Prof. Torgny Säve-Söderbergh likewise could not participate in the field work this season, he greatly assisted in the planning and execution of the project while in Cairo.

Dr. Grossmann's unpublished *Field Report* has provided valuable data for this preliminary report. As architect and consultant for this project, he brings a wealth of experience and expertise in early Christian architecture in Egypt for the interpretation and integration of the architectural remains uncovered. Indebtedness to him permeates this report--far more than the instances where he is overtly cited. Furthermore, through his excellent instruction and kind guidance he is training his assistants on the staff.



THE PACHOMIAN MONASTERY-BASILICA COMPLEX: BACKGROUND

The village of Faw Qibli is where the ruins of the basilica of St. Pachomius are located. The name of Pachomius (ca. 292-346 A.D.) is directly associated with the formation and development of monasticism in Upper Egypt. While serving in the military forces, Pachomius came in contact with some Christians whose example attracted him to Christianity. First, he became a disciple of a famous hermit called Palamon at Chenoboskeia. Shortly thereafter (c. A.D. 320) Pachomius organized his own monastic community at Tabennesis whose rules and code of discipline became a model for many other communities. A picture of the life and discipline of these communities can be found in the *Life of Pachomius* readily accessible in the Vita Prima Graeca translated by Apostolos A. Athanassakis and published with the text edited by F. Halkin in the Texts and Translations: Early Christian Literature Series edited for the Society of Biblical Literature by Birger A. Pearson (Missoula: Scholars Press, 1975), which some suggest provides a glimpse into the probable *Sitz im Leben* of the Gnostic Papyri. See John Barns, "Greek and Coptic Papyri from the Covers of the Nag Hammadi Codices: A Preliminary Report," *Essays on the Nag Hammadi Texts: In Honour of Pahor Labib*, Nag Hammadi Studies 6 (Leiden: E. J. Brill, 1975), pp. 9-18.

A Coptic legendary text extant in Arabic translation published with a French translation by Arnold van Lantschoot, *Le Muséon* 47 (1934) 13-56 reports that Pachomius built a modest church at Pabau (modern Faw Qibli) with other installations for the monastic community. During Pachomius' later years, the monastery at Pabau became the chief center for all the monasteries in the area. Frequently in the *Life of Pachomius* it is referred to as ἡ μεγάλη μονὴ Παβαῦ (Sec. 78). It is in this monastery that Pachomius spent the closing years of his life. The management of all the monasteries was located here with the appointment of Theodore as οἰκόνομος at Tabennesis with the responsibility of inspecting all the monasteries and reporting to Pachomius at Pabau. Later, a large basilica replaced the earlier church. This brief survey demonstrates the important role of the Pabau monastery during and after the lifetime of Pachomius.

The destruction of the basilica has been attributed to Khalif Hakim in the eleventh century and ruins were observed by Abu Salih about 1208 A.D. (see Evetts' Oxford edition of 1895, *The Churches and Monasteries of Egypt and Some Neighbouring Countries Attributed to Abu Salih the Armenian)*. In the early years of the 20th century certain modern

travelers visited the ruins. One may consult early reports by Michel Jullien, "À la recherche de Tabenne et des autres monastères fondés par Saint Pachôme," *Études* 89 (1901) 238-258, with a photograph of the ruins in *Les missions catholiques* 35 (1903) 283, and Louis Massignon, "Seconde note sur l'état l'avancement des études archéologiques arabes en Égypte," *BIFAO* 9 (1911) 89-90 and plates I and II. But the point of departure for research today, since based on a thorough study of the Pachomian literature as well as a survey of the region, is by L. Th. Lefort, "Les premiers monastères pachômiens: Exploration topographique, *Le Muséon* 52 (1939) 347-407. For a photograph of 1950 see Jean Doresse, *The Secret Books of the Egyptian Gnostics: An Introduction to the Gnostic Coptic Manuscripts Discovered at Chenoboskion* (London: Hollis and Carter, 1960), facing p. 222. The first archaeological soundings at the site were undertaken in January 1968 by Fernand Debono. See his report, "La basilique et le monastère de St. Pachôme (Fouilles de l'Institut pontifical d'archéologie chrétienne, à Faou-el-Qibli, Haute-Égypte--Janvier 1968," *BIFAO* 70 (1971) 191-220 with three drawings and plates 45-59. His excavations were located west of the basilica proper in the domestic installations of the monastery. Among his discoveries relating to this area was an aqueduct system bringing water into the complex. In his report Debono discusses (pp. 201-202) a pharaonic inscription upon a stone which Serge Sauneron thought came from Diospolis Parva (Hiw) whose deity is mentioned, although such a reference could be made on a structure anywhere within the area under the supervision of Diospolis Parva, e.g., Pabau; in any case it has been re-used as a pillar base. Debono suggests that the re-use of the stone must post-date 381, the date when Emperor Theodosius officially abolished paganism. This would be a *terminus post quem* for the major basilica whose ruins are seen today. The text was transcribed and translated by Frank Yurco and William Murname, Jr., from the Oriental Institute's Chicago House at Luxor: "Beloved of the great God [who lives by righteousne]ss Lord [of] Hut-sekhem, given life like Re forever."

Today in an open area of about 6000 square meters between the village of Faw Qibli and the cultivated land the ruins of a large colonnaded building are evident. No wall structures are visible, but about 90 column sections are lying on the surface or partially buried in the debris. In addition, numerous pillar bases (some *in situ*), pediments, foundation stones, and some capitals can be seen. From the general position and accumulation of these ruins, the basic orientation of a large basilica can

be ascertained. A massive ridge of column fragments and building debris running from east to west appears to be the location of the row(s) of columns surrounding the north aisle(s). A corresponding ridge, but less pronounced, suggests the location of the south aisle(s) of the basilica. The depression between these ridges, which is devoid of architectural remains *in situ* on the surface, seems to be the nave of the church. This suggested orientation is also indicated by remains of a return aisle on the west ends of the ridges of debris, noted above.

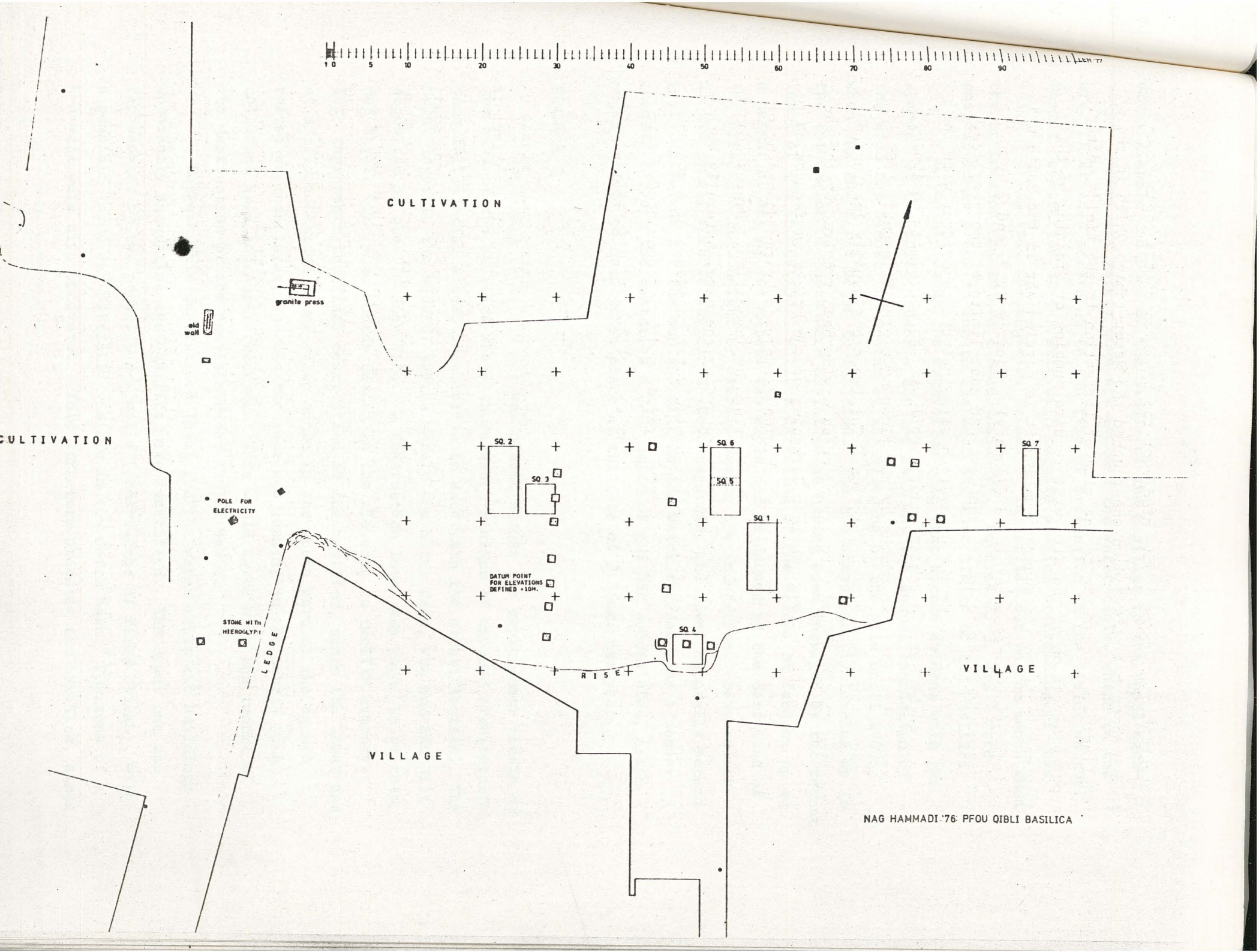
THE PACHOMIAN MONASTERY-BASILICA COMPLEX: THE 1976 EXCAVATIONS

The first operation at the site was the removal of the surface debris, consisting of sugar cane stalks, loose soil, and manure. Some additional architectural members were uncovered, such as traces of pillar bases and foundation blocks.

The architectural team first established a north-south axis and an east-west axis and prepared a ten-meter grid of the area on which all the surface architectural remains were plotted. This same grid plan was used for the positioning of the excavation squares. The basic procedure followed was the stratigraphic method of excavating as developed and perfected by archaeological expeditions associated with the American Schools of Oriental Research. This technique focusses upon the separation and identification of strata exposed in the excavation of a square with the preservation, as long as possible and feasible, of balks between the squares. In this way, the occupational history of a site can be adequately and accurately recovered without necessarily clearing the entire site.

With the use of one-meter wide balks, it was possible to employ the surveyor's grid as the excavating grid--making possible the formation of 9 m. x 9 m. squares (generally too large), 9 m. x 4 m. "squares," or 4 m. x 4 m. squares. The actual size of the squares was generally determined by such factors as time, manpower, architectural remains, and objectives.

Since the 1976 season was restricted by limited funds and time, it concentrated on two objectives: (1) to ascertain the dimensions of the basilica; and (2) to ascertain the stratigraphy of the site. Squares were positioned in the area in alignment with the major axes in order to achieve these objectives. The east balks of Squares 4, 5, and 6 and the west balk of Square 1 provided a north-south cross-section through most of the nave and the aisles to the north and south. This represents the


1 0 5 10 20 30 40 50 60 70 80 90
CULTIVATION
granite press
old wall
CULTIVATION
SQ. 2
SQ. 3
SQ. 6
SQ. 5
SQ. 7
SQ. 1
POLE FOR ELECTRICITY
DATUM POINT FOR ELEVATIONS DEFINED +10M.
STONE WITH HIEROGLYPH
LEDGE
SQ. 4
RISE
VILLAGE
VILLAGE
NAG HAMMADI '76: PFOU QIBLI BASILICA

stratigraphic contours of the middle of the basilica to the depth excavated. About two meters down one reached the water-table, which in the area fluctuates according to the time of irrigation in the fields nearby. Deeper penetration of the site will require pumping or draining of this water seeping into the squares, unless it is carried out in the month when the irrigation canals are closed (January). Squares 2, 3, and 7 were positioned in order to locate the west and east limits of the basilica.

A feature about the excavation site that became evident with the removal of the surface debris and top soil was the annual inundation of the area for almost two months by the flooding of the Nile until 1968, when the Aswan Dam began to function. The two steps usually leading up to the thresholds of doors were explained as having been required by the recent level of the inundations, while a darkening of the bricks on facades up to a height of one or two meters was explained as caused by the dampening of the bricks to this height by osmosis during the inundation. Depressions in the ruins, such as suggested above regarding the nave, naturally became settling basins for the mud and silt as the water receded. As a consequence, through the centuries a deep layer of mud has accumulated, estimated by some to have taken place at the rate of 2.5 mm. per year.

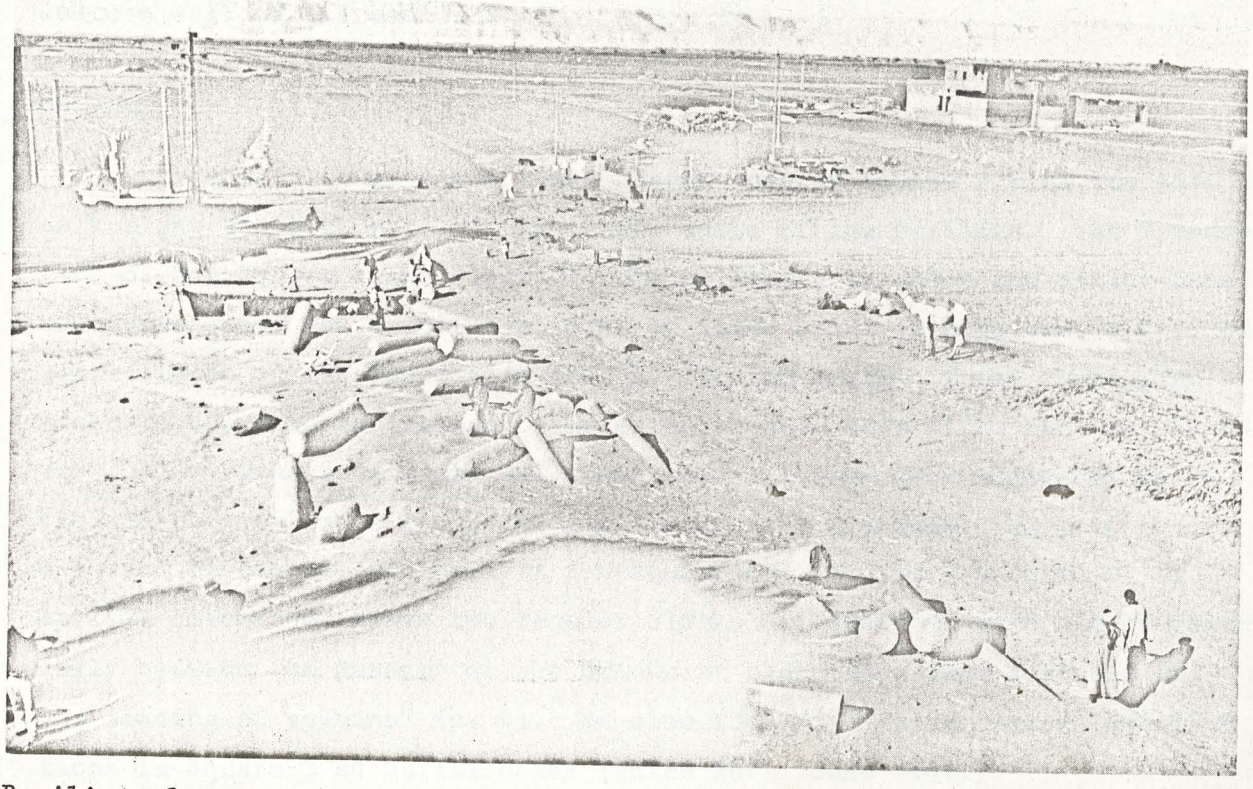
SQUARE 1

Square 1 (4 m. x 9 m.) was placed across the approximate middle of the nave of the basilica where there was a minimum of exposed architecture, thus facilitating a deep penetration to ascertain the stratification. The upper layer in the square, approximately one meter deep, was mud and silt deposited by the flooding Nile. A destruction level was found below this mud layer, with some sherds dating in the eleventh to twelfth century. This represents the final destruction of the basilica, since the lower end of a column section lying at an angle in the south part of the square rested on this layer, whereas the rest was leaning on the debris of a collapsed wall and superstructure. This would agree with the report of the destruction of the basilica under Khalif Hakim.

Between this destruction level and the water table two buildings apparently antedating the basilica were identified. The upper one was represented by two parallel E-W walls (constructed of fired bricks), with a possible third one partially visible in the north balk. Portions of a N-S wall were also uncovered. This structure predates the basilica, since

its features do not integrate with its architectural plan. Preliminary dating of the pottery in context with these walls suggests a fourth century A.D. date. Below these features at the water table a layer of fine brick dust in portions of the square was found. This appears to be the remains of partially-robbed and partially-disintegrated walls of a second structure. Further probing and recovery of contextual potsherds were not possible because of the water seeping into the square at this level. Just above the water level a beautifully-decorated stone block was found which apparently was part of the superstructure of this lower building.

Square 1 thus revealed evidence of two buildings pre-dating the basilica proper. The actual floor level of the basilica seems to have been either destroyed or robbed out, as traces of it in other excavated squares indicate.



Basilica of St. Pachomius, Squares 1 (in shade) and 2, facing west, with Gebel el-Tarif on the horizon.

SQUARE 2

Square 2 (4 m. x 9 m.) was located just to the west of the identifiable remains of the basilica. Debono's excavation of the domestic complex of the monastery was about 15 meters west of Square 2. As in Square 1, a mud layer covered the upper one meter of Square 2. In this layer were found traces of some late burials. A segment of a water channel was found, which is part of the aqueduct system Debono identified. As in Square 1, two building phases anteceding the basilica were identified--the upper one by walls of fired brick and the lower one by a layer of brick dust.

Along the east balk of Square 2, remains of a massive (1.50 m. wide) N-S wall of large ashlars built on a brick foundation were identified (the eastern face of this wall was found along the west balk of Square 3 directly east of Square 1). This founding level was parallel to the north-south colonnade of the return aisle of the basilica. This wall, though it has suffered extensive robbing, appears to be the foundation of the major western wall of the basilica.

SQUARE 3

Square 3 (4 m. x 4 m.) was placed east of Square 2 with its east balk along the stylobate of the return aisle of the basilica. The foundation of one square stone block of this stylobate on which the pillar base must have stood was exposed--a layer of fired brick on edge over a fill of small stones in the foundation trench. In the bottom of the foundation trench a heavy concentration of late fourth and early fifth century sherds was found. Traces of brick walls and installations were uncovered which predate the stylobate along the east balk. Dr. Grossmann suggests that a N-S wall in the western part of the square may be "the stylobate of an earlier colonnade, since two regular blocks of limestone were placed carefully between the masonry of the bricks at a distance very suitable for the placing of columns" (p. 4). He also identifies other brick installations in Square 3 as burial cases (which were found empty).

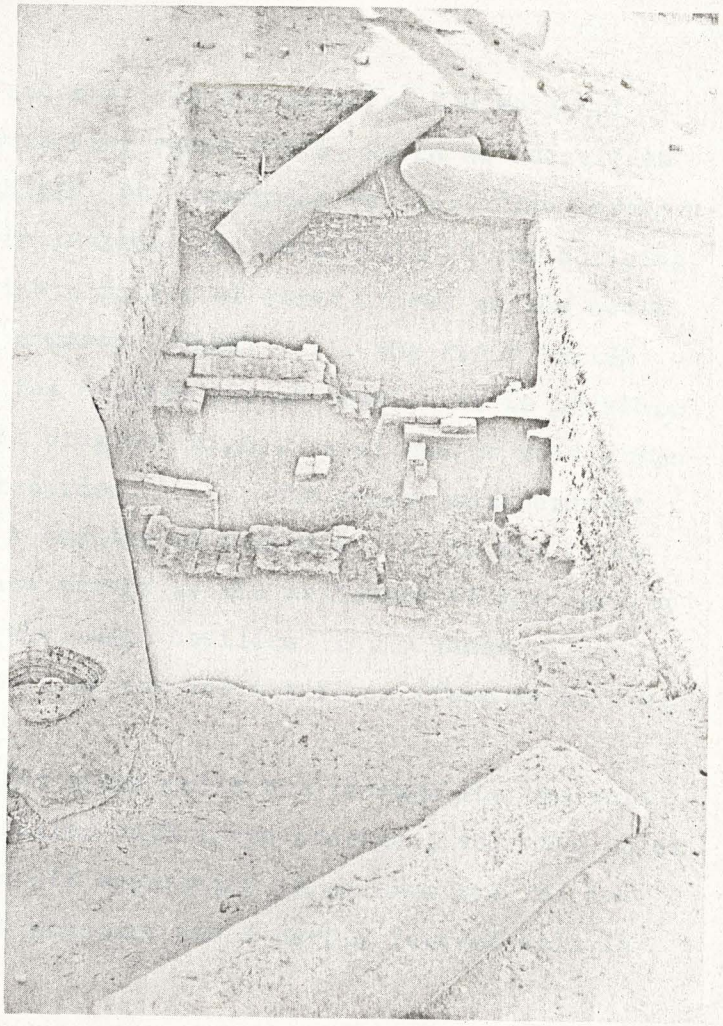
SQUARE 4

Square 4 (4 m. x 4 m.) was positioned to expose a portion of the stylobate (three bases of which were visible) along the south side of the basilica. Below a thin layer of surface soil was an undulating layer of building debris (from the collapse of the superstructure) crowning over the stylobate and adjoining walls. Traces of the basilica floor could be identified in parts of the square. This consisted of some limestone slabs *in situ* and the leveling layer of sand below. Below the floor and on both sides of the stylobate four burials were found. The best preserved skeleton had metal bracelets on the arm bones. It appears that this stylobate and its row of columns separated the two side aisles on the south side of the basilica.

SQUARES 5 AND 6

Square 5 (4 m. x 4 m.) was located just to the north and west of Square 1 and cut across the ridge of building debris along the north side of the nave of the basilica. Square 6 (4 m. x 5 m.) was placed north of Square 5 in order to have a 4 m. x 9 m. probe through the ridge.

Evidences of the basilica were identified in these squares. A few limestone slabs of its floor were found and large portions of the leveling layer of sand identified in various parts of the squares. A thick layer of black mud below these remains appears to be an earlier floor of the basilica. As in Square 4, skeletal remains were found below these surfaces. Regarding the remains of the stylobates of the basilica, Dr. Grossmann observes: "In Sqs. 5-6 the first and second stylobate were robbed down to the lower packing of rough stones which remained. This was clearly indicated by the fill of robber trenches which appeared in the balks on line with the stylobate. Between the two robber trenches, two floor levels of the basilica were preserved, the first [lower] being a thick layer of black mud while the second was of limestone slabs placed on a bed of sand (not to be confused with an even lower mud floor from an earlier building plan . . .). Because of the difference between the elevations of these floors and the surface of the stylobate in Sq. 4, one has to assume that the stylobate was about 40 cm. exposed over the lower level floor and correspondingly about 30 cm. over the limestone floor. Some small rectangular depressions at the side of the stylobate seem to have served as steps for passing over it." (pp. 1f.)



Basilica of St. Pachomius, Square 1, lower end of column section lying on eleventh century destruction level.

Basilica of St. Pachomius, Square 6, vement stones of floor of the basilica

Below these remains of the basilica two parallel E-W walls of fired brick were uncovered. Concerning these walls, which he identifies as perhaps part of an earlier church, Dr. Grossmann writes: "The northernmost of these two walls, which is probably the outer wall of the building, has a foundation of mudbricks with a facing of burnt bricks on the north side which extends down several courses. Thus, . . . the floor inside the building was elevated above the outside ground level. It is possible that the [inside] was built on an original higher level and/or raised due to fill during the time of construction. . . . The inner, southernmost wall . . . did not have as deep a bedding of mudbrick. It is not to be excluded that this inner wall once served as the stylobate of the earlier church. During the erection of the large basilica, . . . these . . . walls were pulled down to the level of the earlier floor [from an earlier building plan]." (pp. 4f.)

The foundation trenches for these walls cut through the contents of an earlier structure--a room filled with large storage jars. The upper portions of the jars were sheared off apparently to accommodate the new building. The south wall of this magazine was a deeply founded wall in Square 5.

SQUARE 7

Square 7 (2 m. x 9 m.) was placed 33 m. east and just north of Square 1 in an attempt to intersect the eastern limits of the basilica. An exposed stone block suggested traces of a N-S wall. Although this block proved not to be *in situ* and thus not part of a wall, it was a beautifully decorated stone and part of an interior sculptured wall. Directly under the stone, traces of the surface were found onto which it had fallen--limestone slabs on a sand bed, i.e., the basilica floor. The potsherds found in context with these remains date them in the late 4th and early 5th centuries, as in other squares. At the termination of the season's work other architectural remains were appearing, but were insufficently exposed to identify or integrate with evidence from other squares.

SUMMARY

The first season of work at Faw Qibli did not ascertain the size of the large basilica. The western limit was identified, but the south and east walls have not been located (in fact, there is fear that the modern village may have encroached upon the southern and eastern sides of the basilica). Dr. Grossmann thinks that possibly the position of the north wall may be indicated by the "standing-block of the outside portico on the north which remains *in situ* [between squares 2 and 6 in line with their north balk] and gives a certain limit to the extension of the basilica" (p. 2). He concludes that the basilica was a five-aisle church --"the position of all four inner colonnades, as well as the western colonnade which separates the return aisle from the rest of the nave, could be conclusively established" (p. 1).

The results of the 1976 season indicate that the basilica at Faw Qibli was large, although its maximum dimensions were not determined. It was possibly 35 to 40 meters wide and at least 75 meters long. If this projected length is correct, the major part of the apse may be under the modern building to the east of the excavation site. In addition to this large basilica, the earliest structure identified (appearing at the water level) also seems to have been a sizeable and important building. Concerning it, Dr. Grossmann writes: "Judging by the thickness of the walls, [this earliest structure] must have been an important building and it is not to be excluded that the tall, well carved columns which were used in the large basilica were originally used in this earlier building" (p. 3). This judgment is also confirmed by the beautifully decorated stone found in this stratum in Square 1.

A TENTATIVE OUTLINE OF THE ARCHITECTURAL AND OCCUPATIONAL HISTORY OF THE SITE OF THE BASILICA

Stratum	*Square 1*	*Squares 2/3*	*Square 4*	*Squares 5/6*	*Square 7*
I (modern)	surface debris	surface debris	surface debris	surface debris	surface debris
II (basilica) 5th-7th c.?	destruction/ floor level	foundation stone of western colonade (Sq. 3); foundation of W wall? (Sq. 2); water channel (Sq. 2)	stylobate/base; upper floor; burials	foundations of stylobate; 2 floors; burials	upper floor
III (church?) 4th c.				E-W walls	
IV (buildings) 3rd-4th c.	walls	installations (Sq. 2)		magazine: jars and S wall	
V (building) 3rd c.	brick dust; decorated stone	brick dust (Sq. 2)			

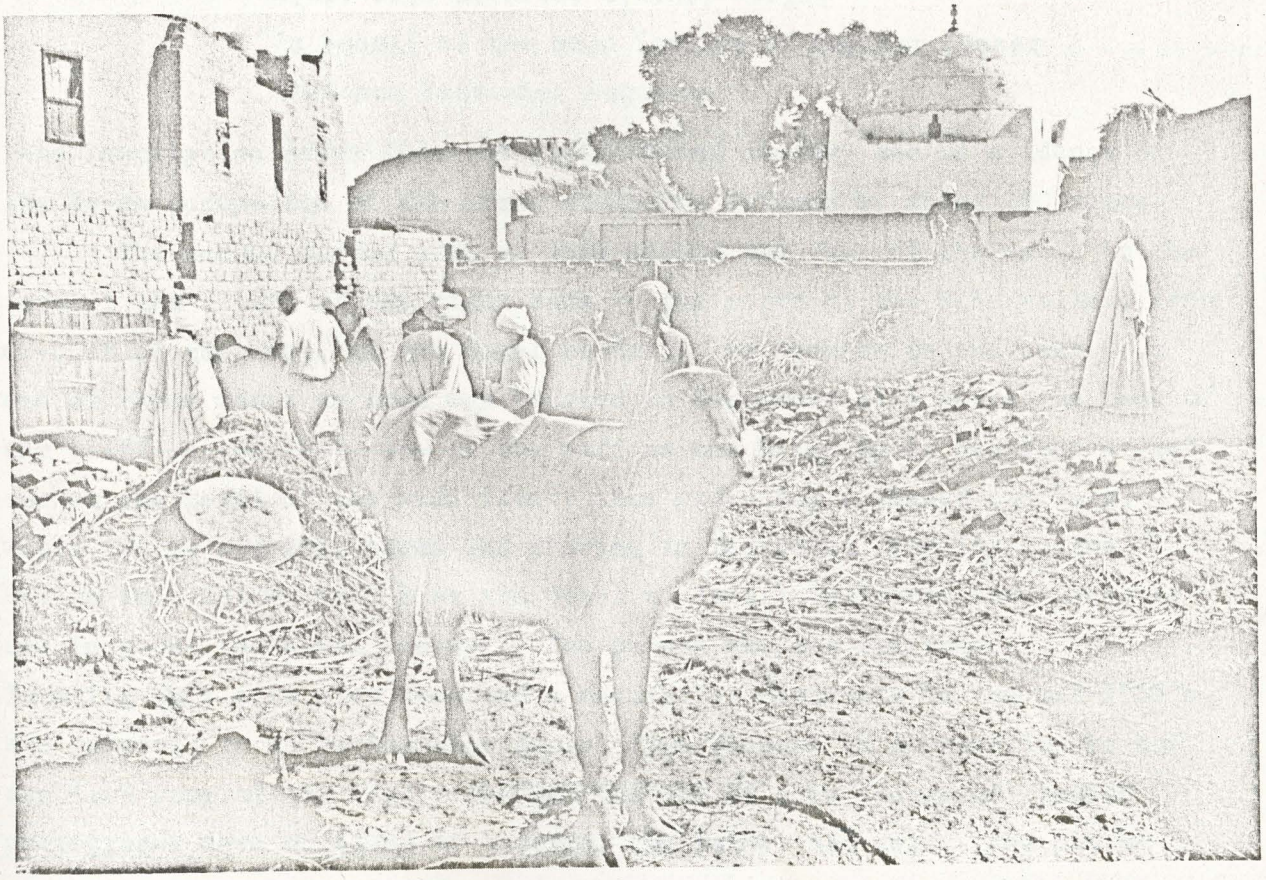
ANCILLARY PROJECTS OF THE 1976 SEASON

During the last ten days of the 1976 season, work resumed at one of the tombs in the Gebel el-Tarif, partially cleared in 1975. This was the Sixth Dynasty tomb of Thauti (T 73). In 1975 lower chambers of the tomb were discovered. The walls of the central chamber at the lower level were covered with hieroglyphic inscriptions, now being prepared for publication by Prof. Torgny Säve-Söderbergh. The work in 1976 focussed on the removal of about one-fourth of the debris (over 1.25 m. deep) in this chamber. The potsherds were mixed (Old Kingdom to Byzantine). Numerous fragments of hieroglyphs (broken off the walls) were found in the debris. Salt crystals protruding through the face of the walls are seriously damaging the hieroglyphs. A sizeable fragment of a statuette of a Sixth Dynasty Egyptian couple was also recovered (the head and bust of the male). Work will be continued in this tomb in a future season in order to make possible the photographing and conserving of the inscriptions.

This season's program involved a survey of el-Kasr (Chenoboskeia). This is the site where Pachomius was converted to Christianity and lived with his spiritual father Palamon in an anchorite cave. ("Pachomius came directly to the Upper Thebaid and visited the church of a little town called Chenoboskeia. There he became a catechumen and was baptized. . . . After it was explained to him that there was an anchorite named Palamon, he went to him to become his fellow-anchorite." *Life of Pachomius*, para. 5-6) After founding a first monastery at Tabennesis (whose location Lefort was not able to identify) and a second at Pabau, an independent monastery at Chenoboskeia joined the movement as the third Pachomian monastery. ("After a time an aged ascetic named Eponychus, father of another monastery of older brothers, came to Pachomius and asked him to accept his monastery into the community of brothers. The name of the monastery was Chenoboskeia." *Life of Pachomius*, para. 54)

The survey of el-Kasr was carried out with the assistance of Dr. Hanny M. el-Zeiny and the mayor of el-Kasr on the one hand and the priest of the Monastery of St. Sufein and St. Palamon on the other. Near the center of the village there is in the middle of the main street a well that is lined several meters down by ashlars that suggest an archaeological site; a tunnel leads off from the bottom of the well that is rumored to lead to the monastery on the edge of town. Just beside the well is a

walled-in field belonging to the mayor in which he keeps his cattle. In it are a few stone artifacts of the Roman or Byzantine period. It is said to be the site of a former mosque; the Copts maintain that there are ruins of a church beneath those of the mosque. The village made plans a decade ago to build a new mosque here, but lack of funding made it impossible to construct the mosque. Just outside the wall (on another side from the well) is an Islamic shrine to a holy man (called a Sheikh or Wali) whose name the Copts interpret as a form of the name of a Coptic saint. This small structure is on a sharp elevation reached by stairs; a couple of meters of ground outside the structure on each side is also at this higher level. The mayor reports that until a generation ago this was a more gradual hillock, but that the flanks were cut away so that the main road would not have to go up and down; only the shrine was left at the original height. Thus it may be the remains of a tell (see Lefort, "Les premiers monastères pachômiens," p. 383). After the excavation of the empty walled field, the shrine is to be moved into it and the area under the shrine later excavated.



Stock yard in center of el-Kasr, Wali in background.
(The well lies outside gate at left)

Photographs and drawings were made of a number of stones from columns, mills, statues and the like; villagers report that in the past boats with foreigners would carry off quantities of ancient stones. A coin of Vespasian (AE 25) found in the village was seen. The most important surface evidence of a town of the Roman period was a Greek inscription re-used as the threshold of a modern doorway. The overall length of the stone is 1.39 m. and the preserved width is 43 cm. The door jambs are placed on the ends of the stone and cover about 12-14 cm. on each end. The inscription contains two lines of which the central portions (about 50 cm.) have been obliterated by continuous use of the threshold. However, the beginnings and endings of each line, except where covered by the door jambs, can be read:

ΠΕΡΑΥΤΟΚΡ	ΤΡΑΙΑΝ
ΔΡΙΑΝΟ	ΤΥΧΗC

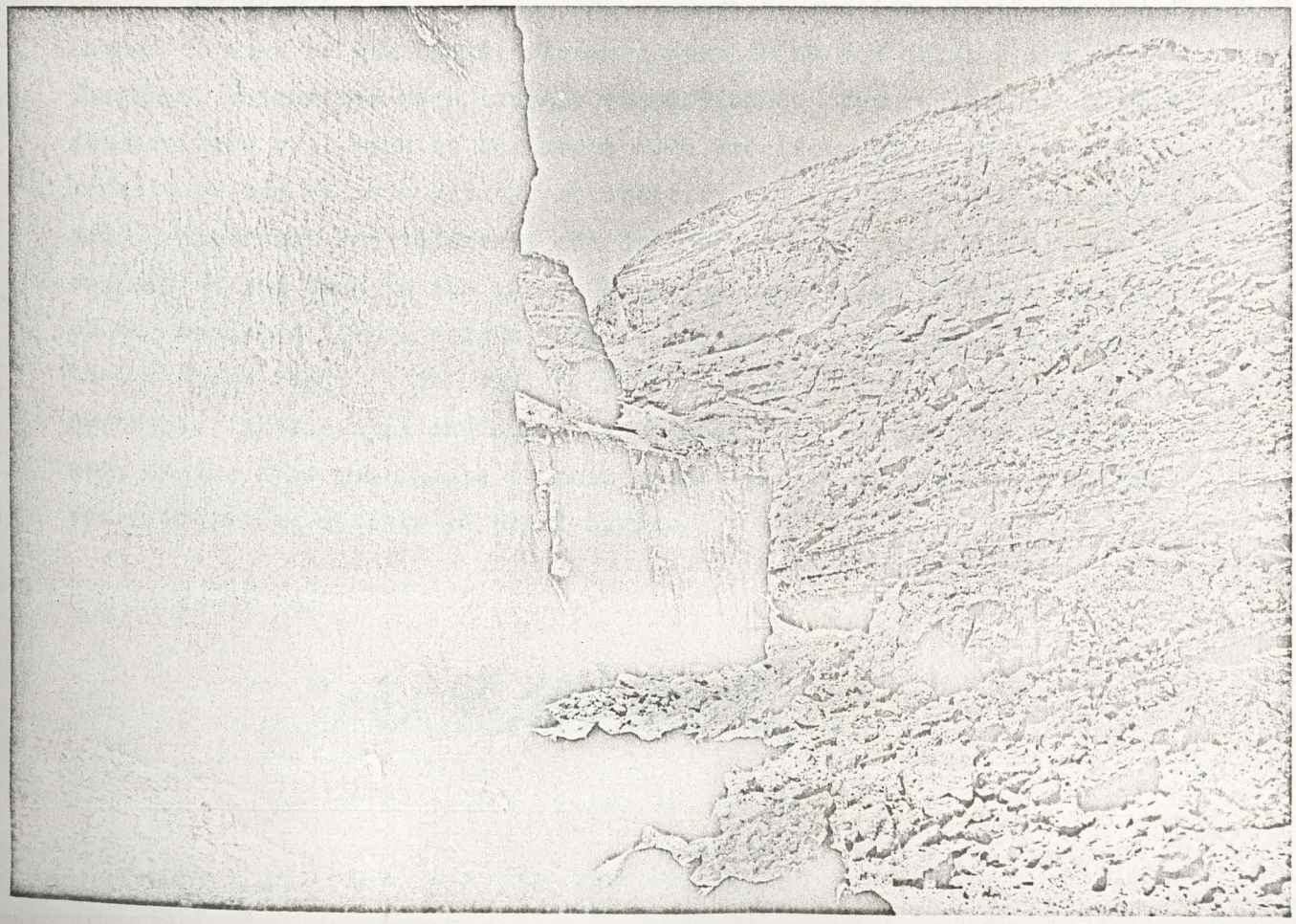
A possible restoration of the text would be:

ὑ]πὲρ Αὐτοκρ[άτορος Καίσαρος] Τραιαν[οῦ
Ἁ]δριάνο[υ Σεβαστοῦ ἀγαθῆς] τύχης
"In behalf of the good fortune of Emperor Caesar
Traianus Hadrianus Augustus"

This inscription dates from the early second century and is evidence of the Roman occupation of the area, predating Palamon by about 100 years.

The second survey area of this season was that of the wadis in the face of the cliffs of the right bank to the north of the Nile valley, from el-Busa on the west, at the Gebel el-Tarif, to Dechneh on the east. In one of these wadis an area was located in September 1975 where the face of the cliff on the left side of the wadi as one hikes up it had been eroded out at the level of the wadi floor, thus producing a shaded overhang, where Coptic prayers, names and drawing in red paint (similar to the Psalms inscription in T 8 at the Gebel el-Tarif) indicated some monastic use in about the sixth century. The person who was instrumental in locating this site also reported a manuscript discovery in the mid-1950's, and referred to an antiquities dealer from Dechneh in Alexandria who had acquired some of the find. Through the son of this (deceased) dealer photographs were obtained of material the father had sold. The photographs could be identified as Bodmer Papyrus XXIV (Psalms, LXX) and a Bodmer unpublished Sahidic Song of Songs. The *editiones principes* of the Bodmer

papyri leave the provenance undetermined (often given as somewhere between Luxor and Sohag), and also are imprecise as to whether the plurality of lots have to do with separate manuscript discoveries or simply different dealers having parts of the same discovery. (With regard to Bodmer Papyrus XXIV: "We do not know from what part of Egypt Bodmer Papyrus XXIV comes. Only one thing is sure: It is not part of the lot comprising the Greek or Coptic Bodmer Papyri II to XVI and XVIII to XXIII, and, furthermore, it is not of the same origin as Bodmer Papyrus I or Bodmer Papyrus XVII." Rodolphe Kasser and Michel Testuz, eds., *Papyrus Bodmer XXIV: Psaumes XVII-CXVIII: (Papyrus Grec)* [Cologny-Geneva: Bibliotheca Bodmeriana, 1967], p. 7.) The most precise statement is by Kasser, "Fragments du livre biblique de la Genèse cachés dans la reliure d'un codex gnostique [Nag Hammadi Codex VII]," *Le Muséon* 85 (1972) 80: "I have serious reasons to believe that [the Bodmer papyri] were found, like the Gnostic codices mentioned above, in a place near Nag Hammadi; if hence our manuscript of Genesis was copied at a place near Nag Hammadi and the same was the case with the Gnostic codices and the Bodmer manuscripts, it is possible that our "volume II of Genesis" comes from the scriptorium where the Gnostic codices were copied or the scriptorium from which the Bodmer manuscripts derive. These are of course simply possibilities, but in any



case they deserve being envisaged." Kasser (note 22) does not think the Gnostic and the Bodmer manuscripts come from the same find, a suggestion by Gilles Quispel in view of the fact that the same dealer Phocion J. Tano was in possession of much of both collections ("Jung en de Gnosis," *Jung-een mens voor dieze tijd* [Rotterdam: Lemniscaat, 1975], pp. 85-86). No biblical, classical or Greek texts are among the Nag Hammadi codices, and no Gnostic texts among the Bodmer manuscripts (although Kasser has suggested that Bodmer Papyrus III may have been produced by Gnostics, *Papyrus Bodmer III: Évangile de Jean et Genèse I-IV,2 en bohairique*, Corpus Scriptorum Christianorum Orientalium 177, Scriptores Coptici 25 [Louvain: Secrétariat du CorpusSCO, 1958], p. 3). Although neither the Bibliothèque Bodmer nor Kasser will communicate whatever further information may be at their disposal, the survey during this season did succeed in interviewing the discoverer and as well several other people involved in handling the manuscripts at the time, from which a number of specifics have emerged, so that prospects are good for work in this regard in the third season.

CONCLUDING OBSERVATIONS

The second season of the Nag Hammadi excavation, which was the first season of work at Faw Qibli, produced gratifying and substantive results. The major objectives were largely accomplished. Future seasons of work at the basilica will seek to delineate more precisely the architectural remains of the various strata, to identify the eastern and southern walls, and to interpret and integrate the artifactual data with the history and culture of the area in the early Christian centuries. Further excavation of the monastic installations just to the west of the basilica proper should throw light on the socio-economic basis of the Pachomian monastic movement. Excavations envisaged at Chenoboskeia (el-Kasr) and in the wadi area should also contribute to this investigation of the Pachomian and early Christian history in Upper Egypt.

مركز البحوث الأمريكي بمصر